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A JOURNAL OF

MATERIA MEDICA AND THERAPEUTICS

FOR THE GENERAL PRACTITIONER

Presenting a

REVIEW OF THERAPEUTIC PROGRESS

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CANCER AND THE PUBLIC

By Frederick Dugdale, M.D., of Lowell, Mass.

What the Public should know about cancer.

That there is a need for the education of the Public against cancer is without question. This dreaded disease is on the increase and it must be combatted. While we have not found a cure for all cases, we have learned much about a cure for the disease in a large percentage of cases. In this paper I will attempt to give in substance upon what the above statements are based.

In the year 1914, there will be 80,000 deaths in the United States from cancer. And there are estimated to be in the United States 300,000 cases.

One woman in every eight and one man in every eleven over 35 years of age, will die of cancer. We cannot help being tremendously aroused to the necessity of prompt action to overcome this frightful mortality.

The subject of cancer is one of the most complex and difficult subjects confronting the medical profession, the individual, the family, the nation and the race. While much has been accomplished in communities in the fight against tuberculosis and the death rate has been reduced to a considerable extent, the death rate of cancer is steadily increasing. We have really made but a small beginning in our warfare in this, one of the greatest enemies of mankind. There is, to be sure, no evidence to show that one is born with cancer, yet in the end a large number do not escape its deadly influence.

There are probably no diseases at the present time of more importance to the public than tuberculosis, cancer and the venereal diseases.

What is cancer? What causes it? Is it a contagious and infectious disease? Is it inherited? Can it be prevented, and if so, how?

These are questions of the most vital importance and the answering of which involves many theories of a scientific nature.

That the terrible scourge of humanity, embraced in these various malignant affections, commonly called cancer, demands our earnest attention as a profession and as a people needs no emphasis. When the figures showing its increase in civilized lands are considered it places a growing responsibility on the members of the medical profession who can no longer fold their hands with honest sorrow on the discovery that a valued life is threatened. Neither can their sorrow be free from a sense of unfilled duty if it has been within their power to assist in the removing of the disease soon after its inception and they have failed to warn the patient of that danger, and even if this may not have been within their power, by reason of the ignorance or inattention of the patient who for many reasons failed to seek aid in time. The responsibility of the medical profession as a whole, still remains, for it is the duty of the educated physician to correct the popular impression that cancer is a hopeless disease from its inception in the great majority of cases. Indeed, in view of recent legislation in the interest of public health, it would seem appropriate that the attention of the various state legislatures be called to the subject as it has

been to tuberculosis in order that proper measures may be adopted to arrest an affection so greatly on the increase as to be rivaled by but three other maladies as a destroyer of mankind.

Cancer is an infection that is indeed more fatal than tuberculosis in its inroads of the adult population. But whether the aid of the authorities in stamping out this disease can be properly secured or not, the most powerful instrumentality in attaining this end will remain in the medical profession, which should educate the patient and the public as to the necessity of an early recognition of all suspicious growths or discharges. That physicians who tell their patients, "Have no treatment for cancer until you are forced to," are not only not doing their duty, but are criminally negligent under our present day teaching and knowledge. Nothing better, however, can be expected until a high sense of responsibility leads to a closer acquaintance with the modern facts, and until then, those of us who are making a study of the subject, shall continue to see a large number of incurable patients, who were not told frankly their condition and told to seek early relief by operation before it was too late, so that the newer, and it is to be hoped better methods, will not be sought only as a last resort.

The hopeless attitude towards the patient afflicted with this disease is largely due to the incorrect views as to its treatment and prevalency. It is high time that false impressions be displaced by the teaching of scientific facts and that the public be given a truer conception of the disease as we understand it today.

In spite of our still incomplete knowledge of certain important scientific relations of the cancer cell, it is utter folly to speak or debate upon the subject as an unsolved problem. As a profession, we know far more about cancer than we did even five years ago. We know that cancer begins as a purely local growth with at that time such relation to the rest of the body as is involved in the probable susceptibility to the inplantation or development of this original local growth towards other parts of the body by the poison from the local growth being carried through the blood stream to other portions of the body where in turn we get other manifestations of the disease which now becomes a constitutional instead of a local disease and in which the treatment of the disease must *now* be combined if success is to be the outcome.

Relief lies in the line of prevention and early attention combined with proper treatment both surgical and medical. I repeat that the education of the public on the problems of tuberculosis, cancer and the venereal diseases are probably the most important which confronts the medical profession today and stimulated by the excellent results that have followed a scientific study of the prevention and treatment of tuberculosis, the cancer problem has now become a subject upon which the searchlight of preventative medicine is being flashed by the greatest minds throughout the civilized world.

One of the most perplexing and pathetic questions which confronts the physician and surgeon is what to do for the patient suffering from cancer. How often it happens that one is obliged to announce frankly that the disease is cancer and that there is no cure. The expression of hopelessness on the face of the victim who finds himself abandoned to the ravages of a loathsome disease and doomed to spend the last days of his life in agony or opium stupor is not pleasant to look upon. Such occurrences are not infrequent to one making a special study of the subject and it serves to make one, who has still left in him enough responsiveness to feel keenly for the suffering of the patient so doomed. Death under these circumstances is all the more tragic when we consider that in the large majority of all cases reaching an incurable stage, some one has made a mistake. The patient or the doctor.

The pathetic incidents which prompt the writings of a large number of articles on cancer today indicate the feelings of the men who have felt and have seen the scourge of this deadly and widely prevalent malady. It is fitting that men of science and the public work together for the relief of their fellow men and to assist in the fight. Tragic appeals from laymen, the earnest but apparently futile efforts of the past, the rays of hope which have been blasted, the steady increases in the disease indicate the magnitude of the problem, and emphasizes the necessity for its solution.

Many physicians of late years have come to realize fully the importance of a more thorough education of the public with reference to cancer, and to feel that the public have a right to a certain amount of definite information along this line. Skilled surgeons throughout the world are devoting their best endeavors to eradicate this disease. Here and there throughout the civilized world groups of earnest, capable men are engaged in the intricate and painstaking work of the laboratory study of cancer. Today, the campaign is being waged along

educational, experimental and clinical lines all of which are converging toward the point of preventing the disease by discovering the cause. At no previous period in the history of medicine has cancer been hunted with such relentless determination as it is today. Money and brains are being spent lavishly in every civilized country in the endeavor to conquer it. A crusade against cancer by the public has become a vital necessity. It should become a stern reality. Let us, as medical men and educators, but point the way and we may be sure that gladly enough will its unfortunate victims fall into line. The physician and surgeon is handicapped in work along this line. He needs assistance and that assistance must come from the patient and public who must join hands with him. Just as insistently as darkness clamors for daylight, so we must insistently keep this subject uppermost in the minds of our patients if we are to save them. Why, in these days of widespread education, should such an appalling state of ignorance of this disease and what can be done for it continue to exist? What is being done to lift these unfortunate people from the mire of ignorance and show them the errors of their ways? Let us adopt measures of showing them what this fight means.

Another fact which is forced upon us is that in spite of the wonderful strides made by the medical profession in recent years in the preventing and treating of disease resulting in a marked reduction from practically every other ailment, yet cancer is steadily and rapidly increasing both in extent and death rate. Ignorance, misrepresentation and superstition are the causes of this unwarrantable state of affairs.

To an intelligent observer it is well nigh inconceivable how people will so neglect the simple measures which are necessary to check it. But many such conditions are beyond the understanding of the conscientious medical man. Precious time is lost and when proper counsel is sought the disease has progressed too far for a cure. This illustrates how difficult is the problem. The general trend of the times is towards public enlightenment. This applies to medical matters as well as to other departments of knowledge, and we now hear laymen debating, with a greater or less degree of intelligent insight, on subjects which only a few years ago were never discussed outside the medical profession.

What should be the attitude of our profession toward the hundreds of thousands of fellow creatures, who now, without suspicion of the dreadful truth, are in the precancerous or early curable stages of the disease? What is our duty towards hundreds of thousands who wil be stricken this year, next year and each year following? This duty is to undertake a campaign of cancer education. Every person should appoint himself a committee of one to proclaim throughout the land that cancer can be cured. Most important still, is the instruction to consult a competent physician on the least suspicion of an unnatural growth or discharge, because in early recognition lies safety. Death following late operation gives the popular impression that cancer can not be cured. If the patient can be told that an operation can be performed without suffering and practically without danger, whereas a few months' delay will mean death, the present prejudice against operative measures would soon disappear and the death rate diminish in proportion.

Again I ask: "Is there a need for the campaign of education against cancer?" Yes, so long as many periodicals, secular and religious, continue to publish in glaring type the misleading and vicious advertisements of cancer cures which take away the last vestige of hope that is left to the sufferer, just so long is there need for such education. The extent and ravages of this practice is shown by a series of articles which have been published and circulated throughout the profession and known as "The Great American Fraud," published by the "Journal of the A. M. A.," and which the writer would advise every medical man, who has the patient's and public's interest at heart to secure, read and pass on. So long as these conditions exist there is need of cancer education, which should extend not only into the home, but into the hospital, the operating room, the business office, and the legislative hall as well.

In the light of our present knowledge concerning the early stages and the progressiveness of cancer, no patient should be denied the benefit of early radical surgical removal to be followed by appropriate medical treatment for the immunization of that patient's blood to as high a degree of resisting power as it is possible with the hope of preventing a re-occurrence. Unfortunately, however, there are to be encountered individuals in the various stages of the disease who refuse operation or in whom it is unwise and unjustifiable to operate as no benefit can result. In those cases refusing operation and in those cases so far advanced that surgery offers no hope, there is a broad field for the appli-

cation of the various new agencies and methods which are offering the greatest hope of effecting a cure or at least an ameloriation.

Contrary to the popular belief, cancer is found in children at birth and, in fact, at any age. The organs mostly affected in women are the breast, womb, stomach, liver and bowels.

That cancer of the womb is becoming more and more frequent all statistics prove. Thousands of unsuspecting women in apparently good health today will, within a year, be in their death bed from this disease. The earliest symptons of cancer of the uterus appear near the change of life and it is common to find irregularities at this time, which are thought to be due to the change. Examinations are not made or insisted upon; the doctor failing to show and explain to the patient the necessity of such examination, with the result that valuable time is lost before the true state of affairs is discovered and it is then too late. The opportune time has passed and the physician should be forced to shoulder the blame. This condition of affairs need not exist if we will educate our patients to present themselves for examination at stated intervals as they do the dentist for the examination of their teeth.

In men, cancer is more frequently found in the mouth, throat, stomach, bowels and rectum. That there are well defined predisposing causes and a pre-cancerous state, we know to be a fact. These are the stages in which the disease is preventable and curable. It is vastly better to prevent than to have to attempt a cure. Properly handled cancer and tuberculosis can be eradicated, it being only a question of time. The question of contagiousness has made slow but sure progress during the past 20 years. The writer claims that a room and house vacated in which a death from cancer has occurred should be carefully disinfected before again being occupied. The same is applicable to tuberculosis.

Women are the greatest sufferers. Married women succumb more frequently than unmarried, women who have borne families, more frequently than those who have not given birth.

Coincident with the general awakening of interest in other diseases, there has come an increasing desire for knowledge concerning this disease "cancer." A number of societies abroad and in this country have organized for the purpose of carrying the knowledge of this subject to the public. In Germany, Winters and Wertheim, with others, have for a number of years carried on a campaign against cancer among women. Circulars are sent broadcast throughout Germany containing information and instructions of value to women. There are also articles published and distributed to men, and articles appear in the public press at stated period giving the proper information on this subject. This has resulted in a large number of women presenting themselves in that stage in which cancer can be cured.

In a communication with the boards of health and medical societies of each state, the question was asked as to whether any organized effort has been made to enlighten the public on this question in any way. Thirty-two states gave a negative reply. Fourteen states, I am glad to state, sent back a reply "yes," and I am proud to be able to say that Massachusetts was in the front ranks. Harvard Medical College, by means of lectures and exhibitions of charts, is endeavoring to arouse public interest on this subject. The other states in which the good work is being carried on are California, Illinois, Colorado, Maryland, Michigan, New York, Oregon, Pennsylvania, South Carolina, Tennessee and Virginia.

There is also an International Society of Cancer Research to which every country, in which cancer research is being done, sends delegates. Meetings are held every year, and a general interchange of ideas is the result, the subject being considered from all standpoints. In this country we have the American Association for Cancer Research, which holds meetings yearly and which is affiliated with the International Association. As a result of the campaign being carried on in Germany among women, the results of early and radical operation are gratifying, as shown by Winter's and Wertheim's reduction of the mortality 30 per cent., and if it is only by such education and treatment that cure can be promised, it is obvious then that patients should go early and not as a last resort.

Why are they so late in reaching the surgeon's hands? There is a widespread belief among the public that surgery is of no avail and it should only be employed when other treatment has failed. This is a sad mistake; it should be just the opposite, surgery first and medical treatment last. This is the cause of a large number of patients refusing operation from the fact that friends or relatives have been operated on and suffered recurrences and finally died. They do not understand, and it is

not explained to the family and friends that the operation was a late one and they draw their conclusions only from the results accomplished by the operation. It is the duty of the physician and surgeon to correct this false impression and substitute for it the truth; that cancer *is* curable if operated *early* and *thoroughly*. I feel certain that if the cases were selected for operation and those cases too far advanced let alone for medical treatment, results would be better.

In the importance of early recognition and early radical operation followed by the proper medical treatment lies our only hope in curing a large majority of these cases. The gravity of a case is dependent very much upon the location and the age of the patient. The younger the patient, the more rapidly will the disease progress to a fatal termination. With modern surgery at hand, no physician is justified in deferring operation merely to gain a positive diagnosis.

At this point, I should like to say a few words in regard to the very large class of unfortunates who are so far advanced that when seen operation is out of the question and they must be treated medically, administrating to them as best we can until they are called to the great beyond from which no traveller returns. It is a deplorable state of affairs to find that the doors of our hospitals are closed to these unfortunates. There is no room for them, for it is taught that there can be no help given them. Is this so with tuberculosis? Not at all. Why should we not have wards in our hospitals where these patients can be segregated, but kept under the trained eye of the physician at all times? A special study being made of every case and applying to that particular individual an individual treatment or combination of treatments out of the many at our command with hope of benefit and cure. We should have hospitals for the advanced and hopeless cases which are most responsible for the further spread of the disease, for it is now generally recognized that, although it is very important to try to cure incipient cases, the advanced or so-called open cases are most dangerous and must not be allowed to become foci for the infection of healthy individuals with whom they must come in contact. That a hospital which would be devoted entirely to the treatment of this disease and for the care of more advanced cases is very much needed is shown by the fact that the hospitals we now have were immediately filled to their maximum capacity and that there is constantly a waiting list of considerable size. While it is right and just that hopeless cases should be allowed to return to their respective communities during the last stage of their disease when assistance and sympathy are appreciated, it must not be forgotten that these patients may easily become a cause of infection for their friends and relatives if proper instructions and supervision by the physician is not attended to. This situation is one which could be remedied by an act of the legislature requiring that each city and town establish and constantly maintain within its limits one or more isolation hospitals for the reception of persons having diseases dangerous to the public health, including tuberculosis, cancer and venereal diseases, or at least to establish tubercular, cancer or venereal wards in the local hospitals.

Another act of the legislature could be passed intended to encourage and promote the building of hospitals in cities and towns by providing for the payment, by the state, of $5 a week for each person who is unable to pay for his treatment. This could be paid only on recommendation by the commission of the hospital.

There can be no doubt that the cancer situation in Massachusetts, as in other states, requires the establishment of local dispensaries and cancer wards in the hospitals in addition to a state hospital for the treatment of this disease. Even these added resources would fail to reach many individuals suffering from cancer and the fact remains that education constant and unremitting must be one of our main reliances in our fight against this great scourge. I recommend also a hospital for the incurable and inoperable cases. We have no hospitals for these cases at present to give them the proper study. We have hospitals for tuberculosis, but none for cancer or venereal diseases.

I am proud to say that at the Harvard Medical College a hospital has recently been opened for the reception and care and study of advanced and inoperatable cases of cancer and in which the disease may be given a thorough study from all standpoints.

To prevent disease the human body must be kept up to a certain standard of health and among the measures suggested for carrying on successfully the warfare against the insidious disease cancer, the following is to be considered. Special instructions addressed to men and women as to its dangers. Medical conferences and examinations properly carried out will discover a considerable number of early cases of

cancer and make possible the early treatment and cure. The early recognition of cases arising in the home of many people and especially those of the poorer classes who are candidates for cancer long before they acquire it, would be made possible. As regards cancer, as well as in many other matters affecting the welfare and happiness of her people, Massachusetts has taken the lead and we hope that laws will soon be passed which will be far reaching in their results. There should be a law requiring that each city and town with a population of 10,000 people or over shall establish and maintain within its limits, a dispensary, hospital and clinic for the discovery, treatment and supervision, and assistance of those unfortunates, rich or poor, who may be victims of this disease. An Information Bureau and Clearing House and center for the supervision of home treatment, the connecting link which completes the chain of the other undertakings.

In the treatment of cancer no specific therapeutic means or medical treatment exists at present. Operative treatment in properly selected cases in combination with medical treatment will give a fair percentage of cures. In cases so far advanced that operation is not justifiable, a great amount of good can be secured by appropriate medical treatment alone.

The chances of a cure diminishes in inverse ratio to the lapse of time from the inception of the disease.

Serum therapy, which is so fascinating in its newness and infinite possibilities, may reveal a means of cure not yet suspected. Vaccination came after centuries of ignorance and darkness.

Diptheria Antitoxin was the result of years of skilled labor, and in many instances the supposed unattainable has been attained, the inexplicable has been explained. Surgery, the X-ray, the various modalities of electricity, radium, the various forms of serums, body and cancer fluids, transfusing of healthy blood and all other forms of treatment have their limitations and all must be used in their appropriate place to succeed. Do not forget that investigators all over the world are relentlessly working and profiting by the hopes and disappointments of the past, but approaching a little closer to the goal. While our experience with cancer has in some way proven in itself discouraging, yet the numerous victories over other evasive diseases gives us hope to continue the painstaking investigation and study. As physicians and educators, it is our duty to work faithfully and patiently, directing our greatest efforts toward applying with our best judgment and ability the knowledge already gained, to neglect no opportunity to relieve the already afflicted and to educate the patient and public in this great question as best we can with the expectant hope that we shall soon be able to show results such as have been shown in the fight against tuberculosis.

A campaign along the same lines as in Germany should be carried on throughout the United States, for we must realize that the disease is steadily increasing and a multitude of valuable lives are being sacrificed. The campaign should consist of literature to the profession, circulars to the public, distributed through the members of the profession, clinics and boards of health, and the publication of judicious articles in the public press.

One of the motives uppermost in the mind of the writer is the hope that it will be the means of calling renewed attention of the members of the medical profession to the sufferers with cancer in the earlier stages, that earlier diagnosis can be made and patients brought under treatment during the favorable period. Though the call for early diagnosis and treatment is becoming of conspicuous note in our scientific and newspaper literature today, I believe that a *greater* awakening is needed in order that this increasing menace to humanity may be robbed of some, at least, of its victims.

From the facts above you will, I feel, admit that the public needs educating. The patient must be taught to consult the physician more frequently for examination, as we must show him the danger in neglect.

It is only a question of time in the minds of all investigators in this subject when we will have a true, specific treatment for cancer, as we have in diptheria and in every other disease that has been fatal in the past.

A Gynecological Hint.

R. Waldo refers to the fact that granulations, or small mucous polypi, often form in the lower portion of the female urethra, causing frequent and painful urination. They can easily be removed after the free application of a 2 per cent. cocaine solution. As they are usually associated with urethritis, this must be cured by appropriate treatment; otherwise the growths will return. Not infrequently Skene's glands are infected, and to remove the infection it is usually necessary to incise the small ducts leading to them.

CLASSIFICATION, ETIOLOGY, PATHOLOGY, SYMPTOMS, DIAGNOSIS AND TREATMENT OF INTESTINAL TUBERCULOSIS*

By Samuel Goodwin Gant, M.D., LL.D.
Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus in the New York Post-Graduate Medical School and Hospital

Of the various intestinal diseases with which we have to contend, barring cancer, tuberculosis is the most disheartening to treat, although in recent years considerable progress has been made in the handling of this class of cases.

Bowel tuberculosis is incited by bacilli which reach the intestine through being inhaled, with the food, in swallowed sputum from an infected lung or by way of the anus from scratching or unclean toilet paper. Consequently this affection may be *primary* or *secondary* and be caused by either *human* or *bovine* tubercle bacilli but is secondary to lung involvement in the vast majority of instances.

Pathology.—Named in the order of frequency with which they occur, tubercular lesions of the intestines may be grouped into the following varieties:

a. Enteric or superficial ulcerative type.
b. Entero-peritoneal or deep ulcerative type.
c. Hyperplastic or tumor-forming type.
d. Fibro-sclerotic type.
e. Peritoneal type.
f. Glandular type.

a. In the *enteric* or *superficial* ulcerative form of tuberculosis, the disease attacks the solitary follicles and Peyer's patches which from bacillary inflammation and distention project outward until through nutritional impairment or caseation the overlying structures give way and diminutive lesions are formed. From this time extension of the process is rapid owing to the formation and degeneration of new tubercles, mixed infection and necrosing endarteritis characteristic of the disease.

Large, single or multiple girdle ulcers form in the mucosa but rarely extend beyond it, except where an active part is played by other virulent microorganisms. Uncomplicated tubercular lesions show a tendency to heal but where secondary infection predominates, they extend with great rapidity.

Enteric tubercular ulcers are usually shallow, of a grayish tint, greasy appearance, uneven base, with irregular soft or indurated undermined edges and have a tendency to follow the blood vessels, encircle the bowel and cause stricture when healed.

The enteric type usually remains superficial, consequently perforation is not common, but the peritoneum, while not tubercular, shows evidences of the disease by its discolored, swollen or roughened appearance.

b. *Entero-peritoneal* or *deep ulcerative* tuberculosis is much more dangerous than the foregoing because the disease usually attacks the mucosa and serosa almost, if not simultaneously, is more virulent and the destructive process soon involves the entire gut wall, as a result of which extensive deep ulcers are formed, papillomatous excresences spring up, profound toxemia occurs, and perforation not infrequently occurs resulting in peritonitis and the formation of adhesions, abscess or a pyostercoral fistula.

Entero-peritoneal tuberculosis most often attacks the mucosa of the ileo-cecal region, extends rapidly and involves the deeper tunics and here as in other types, the ulcers tend to girdle formation but show but little inclination to heal and stricture is rare.

In these cases the mesenteric and retroperitoneal glands become infected and caseate, the peritoneum is congested, fragile, tears easily, is dotted over with tubercles and quickly becomes agglutinated to adjacent structures, the gut has a doughy feel and the ulcers are discernible through the serosa.

c. *Hyperplastic* (hypertrophic, neoplastic) tuberculosis is the most benign form of tubercular infection because it progresses slowly, the accompanying manifestations are less distressing and exhausting and operative measures produce good results.

Hyperplastic tubercular tumors never occur in the small intestine but are often found at the cecum or ileo-cecal region (85 per cent.) and occasionally in the rectum. They may be multiple but are usually single, involve the entire circumference of the bowel, and the hyperplastic changes vary from slight thickenings to enormous enlargements.

Apparently the increased size of the cecum is due to deposits in the gut wall, its lumen and outside, to the formation of a thick, fibrous capsule which gives to the neoplasm its firm, elastic feel, or in aggravated cases to agglutination of the growth, appendix, adhesions of intestinal coils or glands.

*Read before the Newark Medical League, Post Graduate, June, 1913.

Hypertrophic tubercular neoplasms, when sectioned, are grayish, resemble cartilage, the lumen of the bowel is partially or completely obliterated and the mucosa is smooth or covered with papillomatous growths and thrown into atrophic folds devoid of ulcers. The process develops principally in the submucosa and subserosa and continuity of the outer and inner surfaces of the bowel is not broken until late when the tumor degenerates, a condition which sometimes leads to abscesses and the formation of intestinal or abdominal pyostercoral fistulæ.

d. In *fibro-sclerotic* tuberculosis there is an absence of ulcers and scar tissue but the gut is converted into a rigid fibrous tube (gas-pipe intestine) through a subacute inflammation incited by the bacilli, their toxins or other pathogenic bacteria.

e. *Peritoneal* tuberculosis may be local or general and originate primarily in the peritoneum or secondarily from the extension or intestinal foci. In some instances, as in the miliary form, tubercles may be seen thickly scattered over the serosa or in others be descernible here and there as whitish, elevated swellings or ulcerative depressions where caseation has taken place.

In aggravated cases the serosa is thickened, congested, very brittle and bound to adjacent coils of intestine or other organs through slight or extensive adhesions or the walling off of diminutive or larger pus cavities when perforation has taken place.

f. Enlargement of the *mesenteric, retro-peritoneal* and *omental* glands is frequently associated with bowel tuberculosis, due either to simple inflammation or specific infection.

The appendix often becomes involved in intestinal tuberculosis owing to its location in the ileo-cecal region. Hyperplastic changes seldom occur, but the enteric and entero-peritoneal types of the disease nearly always extensively involve the appendix.

Tuberculosis may be encountered in all parts of the bowel but it attacks the ileocecal region, rectum and the perianal structures very much more frequently than the upper part of the small bowel and the colon proper. In fact it originates at the ileocecal angle is about 85 per cent. of the cases.

Symptoms.—The manifestations of intestinal tuberculosis depend upon its virulence, extent and whether it is primary or secondary. When secondary to tuberculosis in the lung or elsewhere the patient usually has an evening temperature, night sweats, emaciation, impaired digestion, shortness of breath, cough and hemorrhages in addition to bowel disturbances. The symptoms consequent upon intestinal tubercular lesions vary greatly, dependent upon their location, stage, character and the part played by mixed infection. Suffering from them is comparatively slight in small bowel involvement, considerable when the colon is affected and distressing when the rectum is diseased.

The incipient stages of *enteric* and *entero-peritoneal* intestinal tuberculosis are characterized by loss of appetite, discomfort in the navel region and a slight increase in the movements, which are soft, but gradually the *symptom-complex* changes and later the patient looks very ill, has a sallow complexion, furred tongue, foul breath, concentrated urine, is restless and suffers from aggravated diarrhea, wherein the stools vary from six to twenty daily (occurring most often in the early morning) and exhibit a considerable amount of pus, blood, mucus and foul gas.

The frequency of the movements and quantity of the discharge bears a direct relation to the number, size and location of the ulcers but the patient's condition is always more aggravated when the lesions are in the lower colon and rectum.

Pain and tenderness are slight except during acute exacerbations when there is often enterospasm and visible peristalsis which are relieved by the evacuations. Cramps occur more frequently and severely when the small intestine is diseased than when the colon is affected and are more common in the early morning hours.

In *enteric* tuberculosis ulceration is superficial and consequently disturbance within the belly is limited principally to tenderness and localized inflammation of the serosa, but in the *entero-peritoneal* type where perforation often takes place, suppurative peritonitis ensues and simple or pyostercoral abscess and fistula may form.

Hyperplastic tuberculosis produces less distress than the other varieties because it is always very limited, develops slowly, does not affect the general health so profoundly and causes no disturbance further than a catarrhal inflammation and slight diarrhea until four or five years have elapsed when the neoplasm caseates and an abscess forms or has attained sufficient size to produce partial or complete intestinal obstruction.

In all forms of tuberculosis of the small intestine and colon, single or multiple strictures, adhesions, angulations and twists of the bowel are frequent complications.

Rectal Tuberculosis.—In incipient tubercular proctitis the mucosa is inflamed, sensitive, swollen, edematous, eroded and smeared over with mucus. The movements are mushy, contain mucus, are slightly increased in frequency and their evacuation is accompanied and followed by mild tenesmus. Later when the membrane becomes granulated and small ulcers form, diarrhea is more aggravated owing to exposure of the nerves, and reflex peristalsis. As the disease progresses the patient's condition becomes more distressing because of mixed infection, trauma to the lesions during defecation, frequent straining and tendency of the feces to collect beneath the undermined ulcers which induces pain, excites sphincteric spasm or causes infection, abscess and fistulae. The evacuations always contain a larger amount of blood, pus and mucus in rectal tuberculosis than when the disease is located higher up and ulcers in the upper rectum induce but little discomfort, while those situated at the anus cause severe pain.

Anal and *perianal* tuberculosis are quite common and may manifest themselves in the form of a superficial ulceration, abscess or fistula. In these cases the patient may exhibit the general manifestations of the disease but shows no bowel disturbances except when there is infection higher up. The lesions here are painful and extend rapidly owing to irritation caused by the feces and clothes.

The patient complains of annoying tenesmus unrelieved by defecation and the wound is sensitive and bathed in a serous discharge which sets up a dermatitis and often leads to deep infection and the formation of true tubercular fistulæ.

When stricture results from ano-rectal tuberculosis, the patient suffers from sensations of weight, fullness and pain in the sacral region and an unrelievable desire to evacuate the bowel. In exaggerated cases where stercoral ulcers form above the constriction and feces or the discharge becomes pocketed within them, infection takes place, an abscess results and the pus drains downward beside the rectum to find an outlet through a fistulous opening in the ischio-rectal fossa.

Diagnosis.—In the incipient stages of bowel tuberculosis, particularly when the small intestine or upper part of the colon is involved, it is sometimes difficult to differentiate this affection from catarrh, dysentery, lues and other inflammatory and ulcerative intestinal diseases because the manifestations are about the same, but later when the patient has become emaciated, assumed a tubercular aspect and exhibits the symptoms previously enumerated, one is justified in suspecting tubercular involvement, especially when the patient has foci in the lungs, joints or elsewhere.

Finding of tubercle bacilli in the discharge or scrapings taken from the lesion should, under the above conditions, establish the diagnosis of intestinal tuberculosis, in spite of the fact that swallowed tubercle bacilli from an infected lung have been found in the stools of patients who had no intestinal lesions.

In the later stages of severe ulcerative tuberculosis it is impossible to differentiate between the two types except by obtaining the history which will reveal the fact that it is *enteric* if the progress of the disease has been slow or that it is *entero-peritoneal* if the patient has been profoundly ill almost from the beginning, for in the former there is only superficial involvement of the mucosa and in the latter a rapid involvement of all the bowel tunics.

Ordinarily enteric tuberculosis becomes well established in from six months to a year while the entero-peritoneal form progresses sufficiently far to produce pronounced manifestations in from three to six months.

There is no excuse for confusing these types of tubercular infection with the *neoplastic* or *hyperplastic* variety because four or five years are required for the latter to develop and with the exception of slight catarrhal or obstructive manifestations the patient is not greatly disturbed nor does he look very ill or emaciated.

In other types of the disease nothing can be made out except tender spots and active peristaltic movements, while in hyperplastic tuberculosis one or more large, firm, elastic tumor masses can be seen or located by palpation, usually at the ileo-cecal angle, the patient suffers less severely from indigestion and exhaustive diarrhea, shows marked symptoms of obstruction and may exhibit pus accumulations or pyostercoral fistula when perforation or disintegration of the growth has taken place.

This type of infection is more frequently mistaken for carcinoma than other forms of tuberculosis owing to its tumor formation and the obstruction caused by it, but should be readily differentiated from cancer because it occurs in younger persons, develops more slowly, there is no cachexia and but a slight loss in weight.

The various types of tuberculosis can be

satisfactorily and quickly diagnosed when located in the sigmoid flexure, rectum or at the perianal region, because ulcers, tumors and stricture formations can be felt by digital examination or inspected through the proctoscope or sigmoidoscope and the discharge and scrapings from the lesions are easily obtainable for examination to determine the presence or absence of tubercle bacilli or tissue.

Tubercular ulcers differ principally from other ulcers in this region by their large size, depth, grayish uneven base, irregular undermined edges, lack of sensitiveness, tendency towards girdle formation, propensity to heal at one point while extending in another and the serous character of the discharge from them.

Perianal tuberculosis produces a dermatitis and the skin is of a livid red color and raised at different points by conglomerate masses of tubercles but later when caseation has begun, grayish elevations are to be seen at one point and diminutive excavated depressions at another. When fully developed, one or more large irregular-shaped ulcers with fluted edges are observed upon the skin which gradually extend in every direction but with particular rapidity towards the anus, the surfaces of which are constantly bathed in a serous discharge which favors hypertrophic changes and the formation of papillomatous growths similar to those seen upon the mucosa in bowel tuberculosis.

Treatment.—Routine measures are impracticable in the treatment of bowel tuberculosis because of the varying types and virulence of the infection, the fact that it is primary in one instance, secondary in another, ever changing symptom-complex in the different types and further because it is often necessary to suspend the regular for a symptomatic treatment directed against a particular manifestation which has assumed sudden and pronounced importance.

Measures to improve the general health are of prime importance and should be instituted at the earliest moment and consist principally in removing the patient from disagreeable and unhygienic surroundings and placing him where he has cheerful companions to encourage him, plenty of sunshine, fresh air, moderate exercise, diversion and where he can obtain an abundance of fresh milk, eggs and other nutrient food. It is also important to clothe the patient properly, have him avoid exposure, eat frequently and bountifully of suitable foods and discard articles of diet known to disagree with him, and to prescribe tonics or tissue builders such as Russell's Emulsion of mixed fats and vegetable products, olive oil and egg, eggnogs, and cod liver oil preparations in so far as they do not interfere with digestion. When the patient is anemic and nervous, iron, strychnia and arsenic may be employed to advantage alone or in combination with codeine, guaiacol or creosote, when the patient has an irritable cough.

Medical agents are at times indicated in the *symptomatic treatment* of intestinal tuberculosis to relieve diarrhea, pain, hemorrhage, putrefaction and other manifestations but should be employed with discretion, because they frequently interfere with digestion, induce intestinal catarrh and sometimes cause obstruction through the formation of bismuth enteroliths.

For controlling diarrhea opium is the remedy *par excellence* because it diminishes evacuations, relieves accompanying cramps and encourages sleep. The various preparations are serviceable but powdered opium in one-half to one grain doses alone or combined with belladonna when there is enterospasm, affords the most relief, but it is curative only in so far as it gives the bowel rest.

Numerous antiseptic and anti-putrefactive remedies have been prescribed in the treatment of tubercular diarrhea but experience has demonstrated that they are usually ineffective because it is impossible to administer them in amounts sufficient to produce a bactericidal effect owing to their toxic and irritative qualities. The most reliable drugs of this class are calomel, bismuth subnitrate, salicylate and carbonate, salol, betanaphthol, tannoform and in suitable cases, dilute hydrochloric and sulphuric acids.

Styptic medicines may be prescribed independently but are more useful when employed in combination with opium. The most reliable and least harmful of these are lead acetate, gallic acid, tannalbin, ichthoform, bismuth subgallate and silver nitrate, but the latter should be cautiously employed to avoid argyria.

Koch's tuberculin and different sera have been employed in the treatment of intestinal tuberculosis, but the writer has never observed any permanent improvement from them.

Irrigating Treatment.—Bowel flushing is beneficial in all types of intestinal tuberculosis but is more effective in the *enteric or superficial ulcerative* than in either the entero-peritoneal, hyperplastic, glandular or

peritoneal varieties, because all the lesions are superficial and easily reached.

In *entero-peritoneal* tuberculosis the irrigations are beneficial because they clear the bowel of irritating feces, discharges and toxins, attenuate, dislodge and flush out tubercle bacilli, minimizes the danger from mixed infection, increase local resistance and favor healing of the excoriated mucosa, but further than this, washing is useless, because the medication does not reach foci in the muscular and peritoneal coats.

In *hyperplastic* tuberculosis, irrigation lessens the accompanying simple or specific catarrh and later when the neoplasm degenerates and crater-like ulcers form, it limits toxemia, mixed infection and hemorrhage.

In *fibro-sclerotic, glandular* and *peritoneal* intestinal tuberculosis irrigation is helpful but not curative.

There are no specific irrigants for intestinal tuberculosis, consequently those effective in other forms of entero-colitis may be employed here. Flushing with water is beneficial, but when the irrigant has soothing, antiseptic, styptic or healing qualities, better results are obtained, but their chief usefulness is due more to their mechanical effect in ridding the bowel of toxins, acrid discharges putrefying food remnants and foul feces than to their medicinal qualities. Injected cold (55° to 75° F.) solutions are disagreeable, often cause cramps and are quickly expelled while warm or hot (100° to 115° F.) soothe the gut, diminish soreness, relieve enterospasm and are more effective because longer retained.

When there is exhausting diarrhea, copious bleeding and quantities of mucus and pus, the writer flushes the bowel every other day with silver nitrate, 30 grains to the quart, followed in a short time by a saline irrigation to remove any excess of silver until the stools are less numerous and bleeding is arrested, from which time the bowel is irrigated daily with boric acid, 3 per cent; ichthyol, 1 to 2 per cent.; balsam of Peru, 1 per cent.; potassium permanganate, 1 per cent.; or protargol or argyrol, 5 per cent.

Olive oil, neutralol and liquid paraffin, in tablespoonful doses at night are beneficial in many cases, but better results are obtained when they are combined with bismuth, aristol, salol or iodoform and are projected high up in the colon in amounts varying from four to ten ounces or more, because then they allay muscular spasm, protect the gut from irritation and favor the healing of raw surfaces.

Irrigations often fail because the technic of their administration is not understood and the tube is permitted to curl upon the rectum or sigmoid flexure. Patients may be permitted to sit in the toilet or remain upon their back or side when taking an enema to evacuate feces, but irrigations designed for the cure of colonic ulcers should be administered by the physician or a trained attendant. The simplest, quickest and most effective ways of filling the colon with fluid or oil are to place the patient in the exaggerated knee-chest or inverted posture, introduce the sigmoidoscope and pour the solution through the instrument into the bowel, pass in a colon tube attached to a funnel and let it flow in gradually, and then escape through the lowered tube or remain to be evacuated later, or by using a soft rubber return-flow irrigator of the Jelk's type.

Topical Applications.—Tubercular ulcers of the *sigmoid, rectum* and *perianal* regions can be more satisfactorily treated than those higher up because topical applications can be employed. When the ulcers are in the bowel the treatments are made through the protoscope by means of a cotton-covered applicator dipped in a 20 per cent. solution of ichthyol and glycerin, balsam of Peru, argyrol, protargol, or a weaker solution of silver nitrate, but when sluggish or covered with flabby granulations these remedies may be used much stronger. Chemical caustics like nitric and glacial acetic acids should not be employed because they frequently extend to and destroy healthy tissue and when more radical treatment is indicated the electric or Pacquelin cautery should be substituted for them. *Perianal* tubercular ulcers require frequent cleansing and about the same topical applications as rectal, but when stimulation and cauterization aggravate them the lesions should be treated twice daily with a 10 per cent. solution of methylene blue or be covered with cotton, soaked in an emulsion composed of olive oil, Oi, bismuth ℥ij, and orthoform ℥i, to allay pain and encourage healing.

Irrigation *per* rectum and topical applications frequently fail because the fluid cannot be made to reach all of the affected gut, in which case one must resort to one of the following surgical procedures if a cure is to be effected.

* * * [The author here outlines the indications for and the technique of the

various surgical procedures that may be employed.—Ed.]

Nearly all subjects afflicted with intestinal tuberculosis have latent or active foci in the lung which may become aggravated and cause the patient's death when ether is administered, and because of this the writer substitutes ethyl chloride or gas in the shorter and chloroform for the longer operations, where general anesthesia is employed. In a few instances he has succeeded in almost painlessly performing appendicostomy, cecostomy and enteroanastomosis for the relief of tubercular and other lesions of the intestine by infiltration anesthesia, using a ⅛ per cent. eucaine solution.

In conclusion the writer would call attention to the fact that his results have been very much better since he began to treat this class of patients on the basis of a dual infection by prescribing hygienic and supportive measures to correct lung involvement, and by treating the lesions within the bowel by internal medication, irrigation, topical applications or operation alone, or in combination according to the exigencies of the case.

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FURUNCULOSIS OF THE EXTERNAL AUDITORY CANAL. THE USE OF ALCOHOL AS A VALUABLE AID IN TREATMENT*

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Furuncles of the external auditory canal do not differ in pathology from boils in other parts of the body. They are caused by an infection of the hair follicles. This infection may be predisposed by a discharge from the middle ear passing over the canal, by picking or scratching, by the removal of cerumen, by an unclean speculum, and by sea bathing. Because the thin, sensitive skin of the meatus is firmly adherent to the underlying cartilage, any infection here is extremely painful. The inaccessibility of the parts makes satisfactory treatment unusually difficult.

Ordinarily, the diagnosis in an uncomplicated case is easy. When associated with mastoiditis and there is edema of the tissues, the exclusion of mastoiditis is very difficult at times. Usually one finds tenderness on manipulating the auricle and there is marked tenderness on pressure in front of the tragus. On examination the cartilaginous canal will be found very sensitive to the speculum, and its lumen will be encroached upon by one or more swellings of the wall. The pressure of a probe will elicit tender points where the furuncles are located. If the middle ear is normal the hearing will not be much impaired, provided the swollen walls do not touch and there is no cerumen or discharge to obstruct the sound waves. In later stages the infection may involve the deeper tissues about the canal and there will be edema behind or in front of the auricle.

The usual treatment has consisted of hot douches, wicks of carbolized glycerin and one or more incisions in the canal.

When one considers the etiology of the infection, it becomes evident that prevention must accompany treatment of any existing furuncle. The cartilaginous canal is beset with an infinite number of hair follicles, any number of which can be infected by pyogenic bacteria from the discharges of the first boil or by a continuous bathing of pus from a discharging middle ear.

The main object of the treatment with alcohol is the constant sterilizing of the pus and canal wall, thus preventing re-infection. The technic is as follows: The canal is cleaned of cerumen, desquamation, discharge, foreign bodies or polyps. A wick is now inserted into the canal, nearly to the drum membrane, completely filling the lumen. If there is no discharge cotton is used. If there is a discharge gauze wick is used. If the canal lumen is partly closed by one or more distinct "ripe" furuncles, these should first be incised and the pus evacuated. Any incision should be carefully made into the center of the furuncle for, if this is not done, the pus does not escape and the patient is not relieved. In addition, there is danger of infecting a new area, and a perichondritis sometimes results from trauma to the cartilage. A probe point will often help to locate the center of a furuncle.

After being inserted snugly into the canal the wick is saturated with alcohol, plain or with boric acid, and the patient is instructed to keep the wick wet by dropping alcohol upon it at frequent intervals. The wick should be removed daily by the physician and a fresh one inserted. Whenever a pocket of pus can be located it should be incised. After incision, the alcohol should be applied before the patient recovers from the anesthesia. The alcohol smarts on freshly cut or abraded surfaces

* Boston Med. and Surg. Jour., Oct. 30, 1913.

with the first application, but gives very little discomfort at later applications.

Not only does the antiseptic action of the alcohol prevent more infection, but the saturated wick acts as a small poultice to the canal. If the inflammation has spread to the surrounding tissues, a poultice of a dilute sulpho-naphthol solution over the auricle may be added to the above treatment.

Following this treatment by wicks saturated with alcohol, some of the early mild cases become abortive without surgical incisions. If the pain is severe and no pus can be definitely located it is better to administer an internal sedative and wait for the boil to become "ripe" and the pus to localize, rather than to make incisions at random. The canal should be moistened with alcohol for a time after apparent cure to insure against an immediate return of an infection.

THE MEDICAL TREATMENT OF CHOLELITHIASIS*

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One need scarcely apologize for bringing before a society of this kind the treatment of a condition so common and important as cholelithiasis, considering the wide diversity of opinion which still exists among competent authorities as to the best procedure in certain phases of the disease. No one questions the wide field which surgery occupies in the treatment of cholelithiasis, nor the excellent results which in many cases can be obtained only by surgical means.

The question rather has been raised as to whether there is an efficient medical treatment for any stage of the condition, or if the diagnosis of cholelithiasis carries with it in every case the responsibility on the part of the medical attendant of advising early recourse to surgical measures. Curiously enough, physicians have been among those who have taken the most extreme position in advocating early operation. Thus Billings says, "Gall-stone disease must be recognized as a surgical disease, and, in view of the many possible consequences, the most conservative physician may well hesitate to take the responsibility of non-surgical treatment." Dieulafoy, entirely dismissing medical measures, states that "When once the diagnosis of calculous cholecystitis has been made, recourse must be had to surgical intervention."

When physicians are such strong advocates of operative procedure, one is more readily prepared for the opinion expressed by Bland-Sutton, that "The best and wisest physicians are those who point out to their patients that surgical assistance constitutes the best remedy," or that of W. J. Mayo, who says, "Whilst it cannot be denied that temporary palliation can be procured by non-operative measures, the cure of the patient can only be brought about by surgical means." Sir Berkeley Moynihan is no less emphatic: "I hold that when once a diagnosis of gall-stones has been made, operation is always indicated unless there are grave reasons forbidding resort to surgery. Reasons should not be asked for, to support a plea for operation, but in order to justify any other course. For surgical treatment—all things considered—is far safer than medical treatment: it is *curative*, not *palliative*; its results are *permanent*, and not *temporary*." On the other hand, Kehr, a surgeon of the widest experience in this disease, with a record of nearly 2000 operative cases, and one to whom we owe much of our present knowledge of cholelithiasis, in an address before the Berliner medizinsche Gesellschaft, affirmed that in at least 80 per cent of all cases of cholelithiasis "medical measures alone will suffice," basing his opinion not only on his own observations, but also on the results of the extensive investigations of Aschoff and Baemeister into the pathology of the disease.

When so wide a divergence of opinion exists among eminent authorities, where in the meantime may one look for the safest guidance as to the course to advise in a particular case? The position taken by Mayo Robson, that "Medical treatment must be tried fully before surgical measures are resorted to, but if after a fair trial medical means fail, surgical treatment should be adopted before serious complications supervene, and before the patient is reduced by jaundice, suppuration, or other untoward manifestations," appears, so far as one can judge from recently expressed opinions, to represent pretty accurately the views of the majority of internists in different countries, and I believe is most nearly in accordance with recent investigations and clinical experience.

It must be recognized, even by those accepting the most extreme views as to the general advisability of surgical treatment, that the latter is impossible of application

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in many cases owing to the patient's physical condition, and that therefore in such cases the only hope of relief is in medical measures. In this connection one need only recall advanced arteriosclerosis, cardiac disease, renal disease, and diabetes; and when one considers that cholelithiasis is especially a disease of advancing age, it is obvious that many of the cases fall into the class in which, for this reason, operation is precluded. It would, therefore, be unfortunate for us to take an unwarrantably pessimistic view of the only measures available in many cases.

It cannot be denied that during the last few years the tendency in Great Britain and America, influenced by the experience and teaching of many eminent surgeons, has been to regard all cases of cholelithiasis, with the exception of those in which some definite contraindication is present, as calling for operation. It is equally true, however, that most physicians and surgeons alike have receded from the position which formerly attached so much importance to the mere mechanical presence of gall-stones. Following the teaching of Naunyn, Kehr, Aschoff, and other German investigators, a much broader view of the whole pathological process is being taken, in which the formation of gall-stones is regarded as a mere incident of a disease in which *bile-stasis, infection*, and *more or less widespread inflammatory manifestations* are of *primary* importance, and against which treatment, whether medical or surgical, must be directed. Attention is being directed more to *biliary stasis, infection* and *inflammatory manifestations,* rather than focused on the *secondary* result—the calculi. Kehr considers the calculi in inflammation of the biliary passages in the same light as the fecolith in appendicitis—a product of the inflammation. Since Aschoff has shown that *non-inflammatory cholesterin calculi* may occur, due to bile-stasis and certain metabolic disturbances, as in pregnancy, Naunyn's view as to the *invariable* presence of infection is no longer tenable on pathological grounds, though clinically the fact remains that these cases are unimportant so long as no infection occurs.

All these authorities believe that medical measures may be effective in relieving the inflammatory trouble in many instances, and in producing a virtual cure. Physicians have long since abandoned the attempt to dissolve gall-stones as a primary object of treatment, and surgeons are realizing that the mere removal of gall-stones by operation does not constitute a cure. The idea of *stasis, infection,* and *inflammation* is dominating therapeutic aims. This being the case, medical and surgical treatments are no longer opposed, but rather complementary to one another. In cases where good drainage can be secured, so that stasis, inflammation, and infection are relieved without operation, and the patient remains free from symptoms, this is accepted as evidence of the absence of serious local irritation by the gall-stones. If by reason of the mechanical effects of the gall-stones, or for other cause, the symptoms of infection do not subside, then operation is indicated for its relief. Kehr's statistics show that the results of operation at this time are almost as good as in early operation.

The belief that gall-stones might be dissolved was long held by many physicians. Naunyn thought this might occur in rare instances. This view has been largely discarded, but some recent investigations by Hansemann have reopened the question. He has apparently proved by experiments *in vitro*, and by transferring gall-stones from human beings to dogs, that gall-stones are soluble in normal bile, particularly stones composed largely of cholesterin. He believes, therefore, that if by treatment the catarrhal conditions of the bile-passages can be cured, inflammatory products removed, and the bile restored to its normal condition, the stones will be dissolved spontaneously. Treatment, according to him, should be undertaken with this aim in view, rather than with a view to direct action on the gall-stones. The article is accompanied by a number of illustrations, showing sets of gall-stones in various stages of being dissolved, the research reported establishing once more that normal bile under normal conditions does not permit concrements to develop, and will dissolve in time those already formed. The peculiar shape of the gall-stones found at operation in many cases is due to their being partly dissolved. Hansemann's work, if confirmed, will obviously have an important bearing on treatment.

The quiescence or latency of gall-stones in any case is now denied by some advocates of early operation, who believe that, if *clinically* quiescent, gall-stones are *pathologically* active. Convincing data, however, have not been brought forward to establish their views, which seem based largely upon personal opinion. Apart from the question whether gall-stones may or may not be dissolved, so long as the teaching, based on

autopsy records and clinical experience, was accepted that in over 90 per cent of all cases they remained latent, medical treatment had a safe objective point. If the infection, bile-stasis, and attendant inflammation could be removed, and the stones remained merely as innocuous occupants of the gall-bladder, then a natural tendency to a *virtual* cure was indicated. If, therefore, in a given case, this latent condition could be brought about and maintained, both the physician and the patient were satisfied with the results. It must be admitted that in many cases formerly regarded as latent, fuller knowledge and improved diagnostic technique will now recognize gall-stones as the underlying cause of digestive disturbance, flatulency, etc. We are greatly indebted to surgery for this knowledge, but it has not established the view that gall-stones are never latent.

It may appear almost presumption for a physician, with an experience necessarily limited as compared with that of many surgeons, to obtrude his observations and opinions upon the question of quiescence, but it is apparent that there is no plan of medical treatment with such claims to superiority that it will attract large numbers of patients to any individual physician or clinic, as flock to certain surgical clinics. It follows, therefore, that if experience with the largest number of cases alone is to be the criterion of authority, then the decision must be left to the surgeons. A collective investigation of the results of medical treatment in a large number of cases would be of much value, however, in arriving at a conclusion as to the permanency of relief afforded by medical treatment.

Apart from his experience with larger numbers of cases and the opportunity of seeing the pathological conditions at operations, the advantages of observation are not all on the side of the surgeon. The physician is usually able to follow his cases over a longer period, and oftener has a better opportunity to study, not only the initiation of disease, but ultimate results. The surgeon, moreover, deals with the more severe cases, those which have resisted medical treatment; in other words, the class of cases which all are agreed properly belong to the domain of surgery. His experience being the more severe, more resistant and complicated cases, he naturally takes a more serious view of the disease, and thus of the *hopelessness* of relief other than surgical. Dealing only with surgical measures, he is not in a position to estimate as fully the value of non-operative treatment as the physician who has seen even a limited number of cures without operation.

While accepting the data supplied so abundantly by the surgical clinics, one may properly question if the broad generalization sometimes made therefrom are in accordance with established facts. The teaching of Naunyn, Kehr, Aschoff, and others, as before mentioned, that stagnation of the bile and infection are the chief underlying factors in the development of cholelithiasis, is now generally accepted. Obesity, pregnancy, ptosis of the viscera, fecal stasis, infections in the portal area, and metabolic disturbances, are well-recognized contributory causes. Gall-stones are the *results* of these factors, and not the primary cause of the disease. If the basis of rational treatment be the removal of the cause of the trouble, are we warranted in concluding that a cure has been effected when the removal of these causes is only *incidental to,* and *not the main object of treatment?* Gerster, in studying the causes of failure after operation, has recently directed the attention of his surgical colleagues to the advisability of a more careful consideration of the teaching of Naunyn.

The specter of danger from the development of serious, perhaps irremediable, complications from delayed operation is usually raised by the surgeon, his views naturally being based on the class of cases coming to him for relief. But it will scarcely be argued that his experience represents the average of those who have to deal with cases of all degrees of severity, from the mild or latent to the most serious. In proportion to the general incidence of gall-stones in from 5 to 10 per cent of autopsies, the occurrence of many of the most serious complications, such as cancer, gangrenous cholecystitis, gall-stone ileus, etc., is so infrequent that the danger of their development in a given case is too remote to constitute *in itself* a reason for operation as a *general procedure.* Is it correct to assume that recourse to early operation would appreciably reduce the general mortality by forestalling these rarer complications, when in the majority of all cases gall-stones are latent, or at least do not produce symptoms sufficiently definite to permit of a diagnosis, and especially when the course of the disease will give timely warning in most of the diagnosable cases and direct them to the surgeon? I believe that many clinicians will agree with Kehr, that it is fortunate that we are unable, by the X-rays or other

means, to recognize the quiescent cases, if the presence of gall-stones *per se* is to be taken as an indication for their removal.

But again, it is claimed that operative cures are permanent, whereas medical cures are merely palliative. This statement is scarcely in accord with our knowledge of the pathology of the disease or our clinical experience. After operations the bile-stasis, infection and inflammatory changes must subside, and the underlying causative factors be removed, before the patient can be regarded as cured. If the gall-bladder is not removed, and if the causes underlying the original infection which produced the gall-stones remain or recur, on what grounds have we a right to claim that the stones will not form again, as in the first instance? Operative procedures have not been in vogue a sufficient length of time to determine definitely how frequently recurrences may take place, but that they do occasionally is well known. I have at present a case under observation with symptoms of recurrence six years after operation. Gerster, in a paper on "Unsuccessful Surgery in Disorders of the Bile-ducts," reports 11 per cent of relapses in 57 operative cases, and quotes Ochsner's failures as 15 per cent in *calculous* and 54 per cent in *non-calculous* cases. It is therefore apparent that the claims of *certainty of cure* and *permanency of result* after operation cannot be accepted without qualification.

The danger from operation, even in the most skillful hands, is not to be overlooked. The mortality in Mayo's series of 4,000 cases was 2.7 per cent, and in the cases collected by Bland-Sutton from the English hospitals in 1905, 17.7 per cent, the results varying with the conditions calling for relief and the experience and skill of the operator. Nor must we confound recoveries from operation with the cure of the patient's ills. As with medical cures, only time can show the permanency of relief. Gerster and others believe that drainage after operation is essential for the relief of the infection, and undoubtedly this is the case; but it has been found that in non-calculous cholecystitis, where the infection and its sequences alone are to be dealt with, operation frequently fails to give relief.

Viewing the brilliant results so often achieved by operation in cases where medical measures have failed to yield recovery, has tended, I believe, to make many take too pessimistic a view of non-surgical treatment. The strong opinions expressed by Kehr, Naunyn, Aschoff, Hansemann, Bain, Solis-Cohen, and others as to the effectiveness of medical treatment are widely held by many practitioners of less experience, and these opinions cannot be dismissed too lightly. I have a considerable number of patients who have remained perfectly well, so far as all symptoms or other evidences of disease are concerned, for periods of from fifteen years down.

The non-operative treatment which has had the widest vogue and has longest held the confidence of the profession is the *Carlsbad cure* or some home modification of this treatment. This consists chiefly in the copious use of hot Carlsbad water or Carlsbad salts dissolved in hot water. The waters of Vichy, Ems, and Neuenahr have a similar action. In addition, *rectal injections of hot water* are sometimes used. The *diet* should be plain and unirritating, and the intervals between meals should not be too long. Some authorities attribute little importance to diet, but I have repeatedly seen dietetic indiscretions followed by a lighting up of acute symptoms. The administration of *bile-salts* and *salicylates* for their cholagogue effect and of *hexamethylenamine* as a biliary antiseptic is generally considered of value. A point which is too frequently overlooked after an acute attack is the necessity of *prolonged rest in bed*, not alone until all symptoms have disappeared, but until pain or tenderness on pressure has passed away and sufficient time has elapsed for the subsidence of the local inflammation of the bile-passages, re-establishment of drainage, and the disappearance of infection. This usually necessitates three or four weeks' absolute rest in bed. *Hot poultices* are of value during the acute stages. I do not believe that any case has been given the full benefit of medical treatment where complete rest has not been carried out. *Vaccines* have been suggested to assist in removal of the infection, but of these I have no personal knowledge. In the subsequent management of cases the *treatment of visceroptosis* by a suitable abdominal support, the *avoidance of fecal stasis and recurring infections* in the portal area (appendicitis) are very important. It is interesting to note that prolonged rest is an essential factor in the surgical management of the disease.

Time will not permit of my entering into a detailed discussion of the medical treatment, nor indeed is this necessary.

In conclusion, I believe that the following statements are fairly warranted by our present knowledge of the disease:—

1. While surgical intervention is frequently the best, and often the only means offering a chance of relief, its advocacy, based on certainty of cure and assurance of non-recurrence, is not borne out by results.

2. The main object of treatment is the relief of the infection and inflammatory changes, and not merely the removal of the gall-stones. So long as there is no recurrence of the inflammatory attacks, there will be no attacks of gall-stones.

3. Recovery not infrequently occurs under non-operative treatment, especially in early and mild cases, and particularly after first attacks, before serious local damage has been produced by the infection.

4. Medical treatment should be given a fair trial in all cases where the patient's physical condition does not warrant operation, and with the numerous patients who refuse operation. In many such cases complete and permanent recovery from all symptoms of the disease will result.

5. Medical treatment is indicated in many cases as a preliminary to operation, and in order to allow the acute infection to subside as far as possible.

6. Medical treatment is indicated in all cases *after operation*, to allow of complete subsidence of the infection and, if possible, to prevent reinfection and recurrence.

7. It would make for clearness of thinking and give definiteness to therapeutic aims if we adopt the suggestion of Naunyn to give up the term cholelithiasis and classify these various infections of the biliary passages as *cholangitis*, with qualifying terms such as *simple, catarrhal, suppurative, gangrenous, calculous*, etc., according to the condition present in the particular case.

Personally, I never advise strongly against operation in any case unless it is definitely contraindicated, but after explaining the possibility of failure, and that operation may eventually be required, I do not hesitate in early and mild cases, and especially after first attacks, to give medical treatment a thorough trial, and have found that in many instances excellent and permanent results are obtained.

Bronchiolitis:

Dionini ..... grn. v
Liq. Ammonii Acetatis..... f. ℥iv
Syr. Ipecac ..... f. ℥ij
Syr. Pruni Virg..... f. ℥iv
Aquæ Dest. ..... ad f. ℥iv

M. Sig.: Teaspoonful every two hours for adults.

ACIDOSIS IN CHILDREN*

By C. Willett Cunnington, M.B., B.C.

This condition has attracted a good deal of attention in recent years. It should prove of special interest to those in general practice, for it will be found, if routine investigations are made, that moderate degrees of it are frequently occurring, and are overlooked because the urine is not fully examined. Severe cases are not uncommon, and remain undiagnosed for the same reason.

In that important group of diseases which are responsible for a clinical condition of "fever without physical signs" a place must be reserved for acidosis. Whatever the actual pathology of the condition may be, we may briefly describe it as characterized by the presence of acetone and allied bodies (diacetic and B-oxybutyric acids) in the urine. Diacetic acid is revealed by the well known ferric chloride test, but Rothera's test for acetone is more sensitive, and is in itself, therefore, sufficient. It has been recently suggested that in reality this reaction depends on the presence of diacetic acid, and not acetone. The two substances are so closely allied, however, that for clinical purposes the distinction does not matter.

Rothera's test consists in adding to the urine an equal bulk of saturated solution of ammonium sulphate, followed by liq. ammoniæ, and then a few drops of 5 per cent. solution of sodium nitro-prusside. A purple color, appearing either at once or shortly, indicates the presence of acetone.

Acetonuria in diabetes is familiar enough as a herald of coma, and in the condition known as "delayed chloroform poisoning"; but it is desirable to recognize that there are also much commoner conditions in childhood, in which acetonuria may be present. Naturally, it is the general practitioner who is likely to meet with such.

Certain children are prone to suffer from what is likely to be called "bilious attacks." In my own experience I have found a typical attack to be preceded by a few days of lassitude, with constipation and a furred tongue. The temperature then rises, sometimes only a degree or so, but not seldom to 102 degrees. The pyrexia lasts several days, during which the child is drowsy and declines food. Occasionally the bowels are relaxed and the stools offensive. Often headache is the chief symptom complained of. In a word, we have a condition of "fever without physical signs," and it may

*The Hospital, July 19, 1913.

last long enough to suggest enteric fever. There is no leucocytosis. The child usually feels sick, and may actually vomit.

One distinguishes such attacks from the condition described by Gee as "periodic vomiting" on clinical grounds, but perhaps the distinction is only one of degree. In the former condition there may be some abdominal pain or discomfort, worse if retching is a feature. In such cases a hasty diagnosis of mild "appendicitis" is a mistake easily made. The diagnosis is made by finding acetone in the urine, and this, at the beginning of the attack, not merely the result of vomiting or starvation.

The most severe condition of "periodic or cyclical vomiting," is much rarer, and appears to be more dangerous. Vomiting is constant and continuous, even though the patient is receiving nothing by mouth. The temperature is not raised; often it is subnormal. Physical exhaustion is easily and rapidly produced, and may give rise to considerable anxiety. In a case seen recently the pulse rate rose in the course of a day to 140, small and irregular.

Cyclical vomiting seldom begins under the age of five, and ceases spontaneously at puberty. The attacks recur at intervals of a few months. The children subject to it are usually of the thin, "nervous" type, somewhat anaemic, and "finicky" in their appetite. Inasmuch as it seems reasonable to regard the condition as being in the nature of a toxemia due to faulty metabolism of fats and carbohydrates, the toxins accumulating in the liver (perhaps), until eventually an "explosion" occurs (suggesting an analogy to gout), we should expect these patients to have capricious digestions, and this is found to be the case.

The tendency to acidosis in certain children is an important clinical feature to appreciate, because it is becoming established that it is just these children who are peculiarly liable to "delayed chloroform poisoning" after anaesthesia. Such children, then, should not be operated upon without special precautions to diminish the risk to which they have this curious susceptibility. Fortunately, we are able to accomplish something in this direction.

It seems desirable to limit the amount of starchy foods, especially as we often find these children receive an excess of these substances; and in addition the fats are to kept within bounds. At the first signs of an attack (heralded by drowsiness, furred tongue, and acetonuria) the fats should be withheld entirely. To neutralize the acidosis large quantities of alkali, such as lime water or sodium bicarbonate, are given, until the urine has become markedly alkaline.

In delayed chloroform poisoning it is beneficial to give large doses of an easily absorbed sugar; and, arguing by analogy, it seems reasonable to give the same to children showing the first signs of acidosis. Barley-sugar is both effective and popular.

Suppose the patient has already begun to vomit, it is worth while trying sodium bicarbonate and sugar by mouth, as sometimes these will be retained when nothing else will, but valuable time should not be lost if vomiting is frequent and exhaustion threatens. In such cases it is best to resort at once to proctolysis. By far the best method is the continuous rectal infusion, using some apparatus on the principle of the Thermos flask, whereby the liquid is kept at a constant temperature, and is given without intermission for twelve or twenty-four hours, or longer if need be. A child of seven will absorb six to eight ounces per hour. The fluid should enter the bowel at a temperature of 105 degrees. This necessitates a higher temperature in the Thermos flask (a point often forgotten by nurses). By previous experiment this is usually found to be about 120 to 130 degrees F. The fluid may be normal saline, but better is a 5 per cent. solution of glucose and sodium bicarbonate. If this is not retained it can be given, in a sterile form, under the skin. If vomiting continues, morphia hypodermically may be necessary.

Lastly, if a child, known to be subject to acidosis, requires any operation, the most suitable time to choose is soon after an attack, when the system has, as it were, "disgorged" its excess of metabolic poison. In any case, it is wise to give the patient liberal doses of barley-sugar and sodium bicarbonate the day before the operation, and to omit the conventional purge. One has to bear in mind that any condition associated with vomiting is likely to produce some acetonuria, with perhaps acetone in the breath. Such are not to be confused with true acidosis, which is distinguished by the presence of acetone at the very beginning of the attack.

Capillary Bronchitis:

Ammonii Carbonatis 5ij
Ammonii Iodidi 5iij
Syr. Glycyrrhiz .....f. 5ij
Aquae .....f. 5ss
Syr. Tolu .....ad f. 5iv
M. Sig.: Teaspoonful every two or three hours in water.

NEW REMEDIES OF 1913

ACID ATROPINESULPHURIC:—Colorless prisms. —SOL.: Easily in hot, difficultly in cold, water; also in diluted ammonia and diluted acids; insoluble in organic solvents.—MELT.: 238–239° C.—USES: To suppress salivation occurring during ether narcosis.

ACITRIN:—Ethyl Phenylcinchoninate.—Yellowish, odorless, tasteless powder.—SOL.: Easily in organic solvents; difficultly in water.—Uric-acid Eliminant.—USES: Gout, sciatica, and nerve disorders.—DOSE: 0.5–1 Gm.

ADIGAN:—A digitalis preparation which has been freed from digitonin and other saponin-like constitutents by treatment with cholesterin. Said to be very effective while free from toxicity.

AGOBILIN:—A remedy for biliary calculi marketed in the form of tablets each containing 0.088 Gm. strontium cholate, 0.032 Gm. strontium salicylate, and 0.04 Gm. phenolphthalein diacetate.—DOSE: 2 tablets morning and evening.

AGUMA:—A nutrient preparation made from the soja bean.

ALUMINUM FORMALDEHYDE SILICATE:—See Dreiaform.

AMINOACETPARAPHENETIDINCAFFEINE HYDROBROMIDE:—See Kephalidon.

AMYLENE HYDRATE ISOVALERATE:—See Valamin.

ANOVARTHYREOIDIN:—A serum from the blood of sheep from which the thyroid glands and ovaries have been removed.—USES: Osteomalacia, rachitis, etc.—DOSE: Subcutaneously, 5 to 10 Cc. at intervals of 3 to 5 days.

ANTILUETIN:—Potassium-Ammonium Antimonyl Bitartrate.—Antisyphilitic.—DOSE: 1–2 Cc. of a 2.5% solution subcutaneously. For man *the dosis therapeutica sterilisans magna* is stated to be 0.75 Gm.

ANTIMALAZIN:—A serum from ovariectomized sheep, and intended for use in osteomalacia.

ARGULAN:—Mercury Dimethylphenylpyrazolon.—46.8% Hg.—Antisyphilitic.

ASTHMOLYSIN:—A sterile, aqueous solution of suprarenal extract from the infundibular portions of the hypophyses.—USES: In asthma.—DOSE:—By subcutaneous injection, 1.1 Cc. (as marketed in ampuls. = 0.0008 Gm. hypophysis extract.)

BISMETHYLAMINOTETRAMINOARSENOBENZENE:—Sulphur-yellow powder; 26.5% As.—SOL.: Slowly but completely in water.—Antisyphilitic, like salvarsan.—DOSE: 0.25 Gm. by injection.

BORCHOLIN:—See Enzytol.

BORNYL ISOVALERYLGLYCOLATE:—See New-Bornyval.

BROPHENIN:—Paraphenetidin Bromisovalerylaminoacetate.—White, almost odorless and tasteless powder.—SOL.: Very slightly in water.—MELT.: 157° C.—Febrifuge and Analgesic.—USES: Neuralgia, headache, lancinating pains in tabes, and in pains due to inflammatory conditions.—DOSE: 0.5–1.5 Gm.

CALCIUM ACETYLPARACRESOTINATE:—See Ervasin-Calcium.

CALCIUM-CASEIN:—See Larosan.

CALCIUM CHLORIDE-GELATIN:—See Kalzine.

CALOTROPIS PROCERA:—Mudar; Madar.—An evergreen shrub the leaves and stems of which yield a milky juice which contains a substance having a digitalis-like action.

CASEIN-CALCIUM:—See Larosan.

CAVIBLEN PENCILS:—See Uranoblen.

CHELONIDIN:—A turtle-tuberculin made like Koch's old-tuberculin.—A blackish-brown thick liquid.—USES: For cure and immunization of tuberculous subjects.

CHELONISAL:—A suspension in physiological salt solution, of turtle bacilli rendered avirulent by repeated passage through animals. The preparation is injected intramuscularly for the cure and immunizing of tuberculous subjects.

CHOLEVAL:—A 2-% solution of colloidal silver with 7.5% sodium glycocholate added as a protective colloid.—USES: As urethral injection in gonorrhea.

CHOLINE BORATE:—See Enzytol.

COAGULIN:—Thrombozyme from animal blood platelets.—SOL.: Alcohol, chloroform, water and physiological salt solution.—USES: To check hemorrhage.

COAGULOSE:—A blood coagulant obtained by precipatating horse serum.—USES: Hemophilia, hemorrhage, etc.

COELIACIN:—An extract of the mesenteric glands, and marketed in tablets of 0.3 Gm. each (=0.3 Gm. fresh gland).—USES: Scleroderma.—DOSE: 0.3 Gm. once or twice daily.

COLLOIDAL ARSENIC TRISULPHIDE:—See Thiarsol.

COLLOIDAL CUPRIC HYDROXIDE:—See Cuprase.

COLLOIDAL IRON:—See Electromartiol.

COLLOIDAL PALLADIUM HYDROXIDE:—See Leptynol.

COLLOIDAL RHODIUM A:—See Lantol.

COLLOIDAL SELENIUM:—See Electroselenium.

COLLOIDAL SULPHUR:—See Sulfidal.

COPPER HYDROXIDE, COLLOIDAL:—See Cuprase.

CORDALEN: A digitoxin preparation each Cc. of which contains 0.00033 Gm. of the substance.—DOSE: 1 Cc. subcutaneously.

CUPRASE:—Colloidal cupric hydroxide, marketed in ampuls of 5 Cc. each, and intended for subcutaneous injection in cancer.

CYMARIN:—New Apocynamarin.—Crystalline principle from Apocynum cannabinum. —Colorless prisms.—SOL.: Difficultly in cold water, but easily in hot water and the usual organic solvents.—Duiretic.—USES: As of digitalis.—DOSE: 0.3 Mgm. (in tablet form); also intravenously in solution, 0.025–0.1 Mgm.

DIGIMORVAL:—A digitalis, morphine, and valerian preparation intended for use in cardiac and circulatory disturbances, restlessness, insomnia, pains, etc., as well as coughs, pain in the chest, bronchitis, pleuritis, intestinal pains, and cholelithiasis, Marketed in tablets of 0.005 Gm. morphine, 0.05 Gm. powdered digitalis, and 3 drops menthol valerate, each.

DIHYDROCODEINE:—See Paracodin.

DIOXYANTHRAQUINONE:—See Istizin.

DORAMAD:—Thorium-X for internal use as waters and injections in pernicious anemia, leucemia, angry ulcers, cancer, etc.

DORIFORM:—Tetrabromopyrocatechol Bismuth.—Greenish-yellow, odorless powder. —USES: As of iodoform, in nasal cases, otitis metia, tuberculous glands, etc.—Applied in oily or glycerinic 0.05% emulsion as spray or paint.

DREIAFORM:—Formaldehyde Aluminum Silicate:—Fine white powder.—USES: As dusting powder on wounds, to render these sterile.

ELARSON:—Strontium behenolate, with chlorine and arsenic in peculiar combination.—Almost colorless, tasteless powder.—SOL.: Difficultly in alcohol, ether, and olive oil, insoluble in water.—USES: Anemia, chlorosis, chorea, Basedow's disease, tuberculosis.—DOSE: 1 tablet (=0.0005 Gm. As =1 drop Fowler's solution).

ELECTROMARTIOL:—Colloidal iron obtained by electrolysis.—Marketed in granules, and in solution in ampuls.

ELECTROSELENIUM:—A colloidal selenium in the form of minute, coral-red grains obtained by electrolysis.—USES: In cancer, by hypodermic or intravenous injection of a 2:100000 suspension.

ENZYTOL:—Borcholin.—A choline borate which exerts an action in the system similar to that of the therapeutically active rays.—USES: As bactericide in tuberculosis.—DOSE: Intravenously, 0.01–0.25 Gm. in 10% solution.

ERVASIN-CALCIUM:—Calcium Acetylparacresotinate.—USES: As of ervasin.

ETHYL PHENYLCINCHONINATE:—See Acitrin.

EXTRACTUM OVARIALE:—See Glanduovin.

FOLLICULIN:—A fluidextract of Tinnevelly senna pods, 1 Gm. representing 1 Gm. of the pods.—DOSE: 1 to 3 teaspoonfuls per day.

FORMALDEHYDE ALUMINUM SILICATE:—See Dreiaform.

GALYL:—"1116"; Tetroxydiphosphaminodiarsenobenzene.—Yellowish to grayish-yellow powder.—Antisyphilitic.—USES: Syphilis, trypanosomiasis, etc.—DOSE: By intramuscular injection of an oily suspension of 0.3 Gm. per Cc., two injections of 0.5 Cc. each being made into the lumbar region on either side. Intravenous injections may also be given using an aqueous solution of 0.45–0.65 Gm.

GLANDUITRIN:—A hypophysis extract, each Cc. of which contains the extractive matter of 0.2 Gm. of the infundibular portion of fresh hypophysis.—USES: Subcutaneously and intramuscularly in inadequate labor pains.

GLANDUOVIN:—Extractum Ovariale.—An albumen-free ovarial extract.—Clear, light-yellow liquid, supplied in ampuls. 1.1 Cc. of the liquid = 1 Gm. ovarial substance.—DOSE: 2.2 Cc. subcutaneously.

GLYCEROL MONOIODOHYDRIN:—See Iodosapol.

GLYKOBROM:—White, amorphous tasteless powder.—SOL.: Easily in ether and chloroform, difficultly in alcohol, and insoluble in water.—USES: Where a prolonged bromine effect is desired.

GROTAN:—Sodium Parachlormetacresol.—Disinfectant.—Marketed in tablets of 1 Gm. each and rapidly soluble in water. Used in 0.5% solution.

HEMANTHINE:—An alkaloid from Haemanthus toxicarius, and closely related, chemically and therapeutically, to the tropeine series.

HYGRALON:—A mercury-potash soap containing 30% Hg. and intended for the "colorless" inunction treatment.

HYPOPHYSIN:—A 1:1000 solution of the sulphate of an active base obtained from the hypophysis.—USES: Intramuscularly to promote uterine contractions.

IGEBIN:—Tablets said to consist chiefly of "dimethylaminophenyldimethylpyrazolon with a cinchona alkaloid and the active principle of Kola nut."—USES: Influenza, colds, fever, neuralgia, headache, and articular rheumatism, and to prevent seasickness.

IODOSAPOL:—Glycerol Monoiodohydrin.—A guaiacol compound used as an antiseptic dressing and for disinfecting the hands and surgical instruments, either undiluted or in 1:4 solution.

IODTRIFERRIN:—Iron Paranucleinate.—Reddish-brown powder.—SOL.: Easily in diluted alkalies and concentrated acids; insoluble in water and diluted acids.—USES: Anemia, scrofula, etc.—DOSE: 0.2 Gm.

IRON PARANUCLEINATE:—See Iodtriferrin.

ISTIZIN:—Dioxyanthraquinone.—Gold or orange-yellow leaflets, or orange-yellow powder.—SOL.: Difficultly in usual organic solvents, but more easily in hot glacial acetic acid.—Cathartic.—DOSE: 0.1–0.5 Gm.; usual average dose 0.3 Gm.

KALZINE:—Calcium chloride-gelatin, containing 5% calcium chloride and 10% gelatin.—USES: Subcutaneously in hemorrhagic diathesis, hemorrhage of the internal organs, recurrent exudative pleuritis, Basedow's disease, and bronchial asthma.

KEPHALIDON:—Aminoacetparaphenetidine-caffeine Hydrobromide.—White, bitter, crystalline powder.—SOL.: Slowly in cold, more easily in hot water, and in alcohol.—MELT.: 192° C.—USES: Migraine, neurasthenia, lancinating pains and headaches.—DOSE: 0.3 Gm. single; 1.5 Gm. per day.

KINAZYME:—An active extract of spleen with the pancreatic enzymes.—USES: To increase digestion, nutrition, and leucocytosis.

KRESOPHINE:—A coal-tar derivative.—Reddish-brown liquid, easily miscible with all organic solvents.—USES: As of other coal-tar products.

LANTOL:—Colloidal Rhodium A, marketed in 1:1000 solution in ampuls, and in keratinized capsules, and intended for use in cancer and septic diseases.

LAROSAN:—Casein-Calcium.—Fine, white, tasteless powder.—SOL.: Hot milk.

LAUDANON:—Combination of various opium alkaloids, and intended for use instead of opium. Marketed in ampuls of 1 Cc. each, and containing:

	Laudanon I	Laudanon II
Morphine	0.01 Gm.	0.01 Gm.
Codeine	0.001 Gm.	0.001 Gm.
Papaverine	0.002 Gm.	0.0001 Gm.
Thebaine	0.0005 Gm.	0.0005 Gm.
Narceine	0.0005 Gm.	0.0001 Gm.
Narcotine		0.001 Gm.

LEPTYNOL:—Colloidal Palladous Hydroxide.—Described as "a colloidal solution of wool fat-palladous hydroxide in liquid paraffin, containing 2.5% Pd as $Pd(OH)_2$; 1Cc. = 25 Mgm. Pd."—USES: In obesity.—DOSE: 2 Cc. deeply injected into abdominal fat.

LEUKOZON: A mixture of approximately equal parts calcium perborate and talcum.—USES: Disinfectant dusting powder, either pure or mixed with other remedies.

LUDYL:—"1151"; Phenyldisulphaminotetroxydiaminoarsenobenzene.—Yellowish or grayish yellow powder.—USES and DOSES: As of Galyl (which see.)

MADAR:—See Calotropis Procera.

MENTHOL ACETYLSALICYLATE:—See Menthospirin.

MENTHOSPIRIN:—Menthol Acetylsalicylate.—Viscid, light-yellow liquid, marketed in pearls of 0.25 Gm. each.—USES: Acute laryngitis, frontal headache, earache, coryza, etc.—DOSE: 2 to 3 pearls 2 to 3 times daily.

MERCURY DIMETHYLPHENYLPYRAZOLON:—See Argulan.

MERLUSAN:—A mercury-albumen compound. —SOL.: alkalies; insoluble in acids.—Antisyphilitic.—USES: Syphilis, and particularly in gonorrhea in alternation with other remedies.

METARSAN:—An organic arsenic preparation intended for subcutaneous use instead of salvarsan or neosalvarsan in contagious pleuro-pneumonia in horses.

MUDAR:—See Calotropis Procera.

NARKODEON:—Pastilles each of which contains 0.001 Gm. narcotine hydrochloride and 0.005 Gm. codeine hydrochloride, with tolu and compound acacia powder. Used in catarrh of the respiratory passages.

NEOLYSOL:—A fluid, odorless chlorcresol preparation.—USES: Antiseptic and deodorant like lysol.

NEUROKARDIN:—A solution of the therapeutically active resins from the rhizome of one of the Piperaceæ.—USES: Nervous headaches, neurasthenia, hysteria, heart diseases, arteriosclerosis.

NEW APOCYNAMARIN:—See Cymarin.

NEW-BORNYVAL:—Bornyl Isovalerylglycolate.—Colorless, almost odorless and tasteless liquid.—SOL.: Easily in alcohol, ether, benzene, and oils; insoluble in water.—Sedative and Nervine.—USES: Excitement of all kinds, in debility and collapse, neuroses, and disturbances of the circulatory digestive, and central nervous system.—DOSE: 1 to 3 pearls (ea. 0.25 Gm.) 2 to 4 times daily.

NOVOCOLCHININ:—A mixture of 60 parts quinine sulphate and 40 parts novocol (sodium guaiacolphosphate).—SOL.: Easily in water and milk.—USES: Whooping-cough in children.—DOSE: 1 to 3 tablets (in which form marketed).

"1116":—See Galyl.

PARACODIN:—Dihydrocodeine.—Marketed as hydrochloride and tartrate, both of which are used like codeine for checking coughs, etc.—DOSE: 0.02–0.05 Gm.

PARAIODORTHOSULPHO-OXYCYCLOHEXATRIENPYRIDINE:—See Yatren.

PARAPHENETIDIN BROMISOVALERYLAMINOACETATE:—See Brophenin.

PERBORAX:—A compound of sodium polyborate and perborate.—About 4% active oxygen.—USES: As of sodium perborate.

PERHYDRIT:—A urea-perhydrol compound.—White powder.—SOL.: 2.5 water.—USES: As of hydrogen peroxide.

PHENYLDISULPHAMINOTETROXYDIAMINOARSENOBENZENE:—See Ludyl.

PINOSOL:—A tar product.—Yellow to brownish, honey-like liquid, of mild empyreumatic odor and taste at first oily and aromatic and finally bitterish and pungent.—MISC.: Fatty and volatile oils, fats, petrolatum, and wool fat; affords emulsion with dilute alkaline solutions; insoluble in water.—USES: Instead of tar and empyreumatic oil of birch.

POLYGONUM HYDROPIPER:—Water Pepper.—Used in form of fluidextract in hemoptysis, and in vesical, gastric, and hemorrhoidal hemorrhage.—DOSE: 30–40 drops thrice daily.

POTASSIUM-AMMONIUM ANTIMONYL BITARTRATE:—See Antiluetin.

RADEMANIT:—A radium-charcoal preparation possessing a decided radioactivity.—USES: Cancer.

RESALDOL:—Resorcinolbenzoylcarboxylic-acid Ethylester.—Light yellow crystals, very slightly soluble in water.—MELT.: 134° C.—USES: Dysentery.

RESORCINOLBENZOYLCARBOXYLIC-ACID ETHYLESTER:—See Resaldol.

RHODIUM A, COLLOIDAL:—See Lantol.

RIOPAN:—A concentrated praparation made from Rio ipecac, and containing the hydrochlorides of the ipecac alkaloids to the extent of 50%. 1 Riopan = 20 ipecac.—Brownish powder soluble in water.—Marketed in tablets (each 0.001 Gm. ipecac alkaloids = 0.015 Gm. ipecac.

ROMANXAN:—A nutrient said to consist of the protalbumoses of milk albumen, metaphosphoric acid, and iron salts.—USES: Nutritional disturbances, convalescence from disease, etc.—DOSE: 10–12 Gm. per day.—May also be given in enema.

"STABLE" SCOPOLAMINE:—A scopolamine solution rendered stable by the addition of 10% mannit, and marketed in ampuls containing respectively 0.0003 Gm., 0.0005 Gm. and 0.001 Gm. scopolamine hydrobromide per Cc.

SECRETOGEN:—A combination of the gastric (pyloric) and pancreatic (duodenal) secretins.—USES: To control digestive insufficiencies.

SENNATIN:—A fluid preparation from senna leaves.—Dark, clear, stable liquid.—USES: Constipation.—DOSE: 1 to 3 Gm. internally; also given subcutaneously and intramuscularly.

SENNAX:—A purgative glucoside obtained from senna leaves, and marketed as a lactose trituration.—DOSE: 1 tablet, or 4 Cc. of solution (in which forms supplied) (each = 0.075 Gm. glucoside).

SKIARGAN:—A sterile collargol solution containing 9% Ag.

SODIUM PARACHLORMETACRESOL:—See Grotan.

SOLARGYL:—A compound of silver oxide with proteoses and their cleavage products.—Odorless leaflets of blue, metallic luster.—SOL.: Easily in cold water and in glycerin; insoluble in absolute alcohol, ether, chloroform, and carbon disulphide.

SULFIDAL:—Sulfoid; colloidal Sulphur.—Grayish white powder insoluble in the usual solvents.—USES: As of sulphur externally, either in powder, or in 10% soaps, ointments, etc.

SULFOID:—See Sulfidal.

TENOSIN:—A combination of betamidoazolethylamine and paraoxyphenylethylamine, the active constitutents of ergot.—Colorless, sterile liquid.—USES: Uterine tonic and styptic in obstetrics.—DOSE: 1 Cc. of solution (as marketed).

TERPACID:—Fenchone from fenchyl alcohol. —Colorless, mobile liquid; camphoraceous, bitter taste.—SOL.: Most organic solvents. —USES: Gout, rheumatism, neuralgia.

TETRABROMOPYRECATECHOL BISMUTH:—See Doriform.

TETROXYDIPHOSPHAMINODIARSENOBENZENE:—See Galyl.

THEOFORM:—Condensation product of Theobromine with substances splitting off formaldehyde.—White, very bitter powder. —SOL.: 50 water.—Diuretic.—DOSE: 1 Gm.

THIARSOL:—Colloidal Arsenic Trisulphide.—Supplied in sterilized tubes and in solution.

TRIEN:—See Yatren.

TRYEN:—See Yatren.

URANOBLEN:—A silver-uranine compound. 40% Ag.—Reddish-brown powder soluble in water.—Bactericide.—USES: In gonorrhea, in the form of urethral bougies, named "caviblen pencils."

VALAMIN:—Amylene Hydrate Isovalerate.—Colorless, neutral liquid; valerian odor and taste.—MISC.: All proportions with oils, very slightly soluble in water.—USES: As sedative in all cases where valerian is indicated.—DOSE: 0.25 Gm.; in mild nervous insomnia, 0.5 Gm.

WATER PEPPER:—See Polygonum Hydropiper.

YATREN:—Tryen; Trien; Paraiodorthosulpho-oxycyclohexatrien pyridine.—Yellow, odorless powder.—SOL.: Hot water.—Bactericide.—USES: 10 to 20% solution in vaginal catarrh, gonorrhea, etc.; also as dusting powder for wounds.

YOHYDROL:—New name for yohimbine hydrochloride.

INTRANASAL TREATMENT OF DYSMENORRHEA

Referring first to Fliess' work on the relation between the nose and uterus, and his description of "genital spots" in the nasal mucosa, Emil Mayer, of New York, reports his own experience with the intranasal method of treatment of dysmenorrhea. In cases in which absence of uterine disease as a cause was established by careful examination, and the failure of the usual treatment, especially when there was no obvious nasal stenosis which was so in most of the cases, and there also existed decided tumefaction about the genital spots, he found that the application of cocaine gave wonderful relief to many of the patients. This treatment had to be repeated at each menstruation, and he therefore substituted the galvanocautery or trichloracetic application. The results obtained by the latter method were so permanent that he has lately used this exclusively. He says: "A mild solution of cocaine was applied just before the use of the acid. The slough that forms disappears in about five days, and another application may then be made. The patient was then asked to report the results of her next menstruation. If entirely favorable nothing further was done." In cases in which relief was slight or wanting, four applications were made between the menstrual periods, and if no benefit followed then it was so reported. Ninety-three cases are briefly reported to go into the author's reprints. His conclusions are as follows: "1. Permanent relief is obtainable by intranasal treatment of from 50 to 75 per cent. of the cases. 2. Trichloracetic acid applied to the genital spots four times at intervals between menstrual periods is usually sufficient to obtain lasting results. 3. It afford an additional field of usefulness to our therapeutics. These patients were from every walk in life. Only the bare facts of the cure of a large number of these patients are given; but we should bear in mind that all of these women suffered inordinately, for most women accept some pain at menstruation as a matter of course, and it is only after the suffering becomes unbearable that the physician is consulted. Therefore, their relief without drugs, operation and uterine treatment by a few applications to the nose adds materially to their comfort and the joy of living."—Jour. A. M. A., Jan. 3, 1914.

TREATMENT OF GASTRIC ULCER

The question when an ulcer is to be treated surgically and when medically has been answered to the effect that simple uncomplicated ulcers belong to the internist. The foundation of any treatment consists of rest in bed, hot compresses, and liquid diet, following the original von Leube plan. Schütz ("Wien. klin, Woch.," 1912, p. 1513) believes rest in bed is by far the most important of the three, but hot flaxseed poultices are a great help in combating the pain. Milk is given with cream every hour in portions of 0.1 liter, and this restricted diet is continued for two weeks. An exception is made when pain disappears and appetite returns, in these cases a few days of milk diet suffices, and one can proceed to semi-liquid nourishment. He is not in favor of the rapid increase of food given in the Lenhartz diet, which in many hands has not proved to be the wise course of procedure. Schütz makes the statement, which will meet with the approval of all, that one should not treat all cases of ulcer according to a fixed printed diet, but that any scheme or plan should be made adaptable to the individual case.

As far as drugs go, he warns against the use of silver nitrate and iron chloride. Bismuth, 10 to 20 Gm., in a half glass of water, he says he gives before the meal. It seems scarcely possible that he gives such doses every hour (milk is given that frequently), although nothing is said to the contrary. For the hyperacidity, which is commonly associated, he recommends a small teaspoonful of the following:

Magnesiæ Ustæ	
Sodii Bicarbonatis	āā ʒiv
Ext. Belladonnæ	grn. iij

Only when the above medical procedures fail to give relief, does Schütz advise surgical interference.—Progressive Medicine, Dec., 1913.

Progress in Materia Medica and Therapeutics

SALVARSAN IN PRESENCE OF TUBERCULOSIS

The question has often been raised whether the presence of an active tuberculosis together with syphilis forms a contraindication to the intravenous injection of salvarsan. R. Klokon has had occasion to employ this drug in 12 such cases and has not seen any deleterious after-effects. In three it even seemed as if there were a beneficial influence upon the tubercular process in the lungs. It is, of course, important to select only relatively robust individuals, free from cardiac or renal lesions, and all precautions necessary for the successful intravenous infusion must be carefully observed. The author could not determine whether Salvarsan has any real therapeutic value in tuberculosis alone.—Berl. klin. Woch., Sept. 22, 1913.

TREATMENT OF LUPUS

For the successful treatment of all cases of lupus great care and patience are fundimental. To these even the brilliant success of the Finsen Institute is largely due. Less expensive, though more complicated, methods are followed by equally good results. Scholtz is of the opinion that when possible, excision, followed by suture, is the method of choice. Under good technical conditions the defect may be covered by a plastic flap. The size and location of the area alone determine the limits of the method, whereas Finsen rays have no effect upon the small nodules surrounded by hard scar tissue, upon rapidly hypertrophic types and upon those affecting certain areas of mucous membrane. The curette and Paquelin cautery alone are not sufficient and the same is true of the hot-air treatment advocated by Hollander. Regarding the value of the diathermic treatment, no definite statement can as yet be made. It seems, however, to a certain degree to select the diseased tissue. This applies even more strongly to the tuberculin, light and Röntgen-rays treatment, as well as to the application of the caustic ointments of arsenic, salvarsan, neosalvarsan, resorcin and above all of pyrogallate. The remote effects are treated with advantage by Röntgen-rays or radium. Tuberculin, caustics, light and Röntgen-rays produce results on lupus tissue by setting up inflammatory or necrotic processes. Chematherapy (salvarsan and copper leithin injections) seem to produce beneficial results. Severe cases always call for a combination of methods, and in the selection of the proper combination lies the secret of success. The author usually pursues the following course: Tuberculin injections followed by quartz-rays with compression. After the inflammatory phenomena subside, tuberculin is again injected, and pyrogallate ointment applied. When the eschar separates, quartz-rays at a distance of 20 cm. are used. When the reaction from this has subsided, Röntgen-rays are applied, followed by pyrogallate ointment. Then follow quartz- and Röntgen-rays again and, when the skin has healed, it may be necessary to use the Finsen-rays. During the whole course of treatment tuberculin injections are given regularly at intervals of 5-8 days and in large doses.—International Abstracts of Surg., Sept., 1913.

ACTION OF HELENIN

Helenin, the active principle of Helenium autumnale, was made the subject of a very exhaustive study by P. D. Lamson. Helenin, which is not a glucoside, is a neutral crystalline substance and reduces alkaline copper mannite solution on slight warming. It is said to exert an active irritant action on the mucous membrane, causing sneezing and lacrymation when brought in contact with the nasal mucosa and conjunctivae. Taken internally it causes emesis and diarrhea and when injected subcutaneously produces edema.

On the heart muscle it acts as a direct paralyzant and it increases the rate and force of respiration, although the volume of air expired is diminished. When given to animals, the pure drug produces the same symptoms as those formerly described in poisoning of cattle after ingestion of the entire plant. The giving of melted lard to poisoned cattle would appear rational from the results of the author's experiment in which helenin was given internally to a dog. This plant is probably a cause of fall hay fever. As to the many medicinal uses of helenin mentioned in the literature, as a tonic, snuff, febrifuge, anthelmintic, diophoretic, and as an antidote for "colds" and

venereal diseases, its pharmacological properties certainly justify its use as an errhine. It could be employed as a stomachic in small doses. Its intense gastric irritant action would exclude its use as a vermifuge except in very dilute solutions. The author also believes that its properties do not justify its use as an antipyretic.—Jour. Pharmacology and Exp. Therapeutics, July 1913.

QUININE AND UREA INJECTIONS IN SCIATICA

H. A. Cables, of East St. Louis, Ill., has treated eight cases of sciatica by hypodermic injections of a 4 per cent. solution of quinine and urea hydrochloride in a normal salt solution in the subcutaneous tissue over the course of the nerve. No attempt was made to inject the nerve itself. There were fifty injections in all and no untoward result except a little soreness that follows any hypodermic injection. Seven patients received six injections each and one received eight. All were relieved after the first treatment and none had any severe attack after the third. The duration of the cases ranged from one to thirteen weeks before the first treatment and half the patients had been previously treated by other physicians for variable length of time.—Jour. A. M. A., Dec. 27, 1913.

THERAPEUTIC ACTION OF THYROID EXTRACT

Thyroid extract has been used in the past in the treatment of obesity, although such a procedure has not received general approval. Jump ("Penn. Med. Jour.," Oct., 1912), however, is of the opinion that there is a distinct field for the extract in certain cases of obesity, namely, the constitutional or thyrogenous obesity, where there is a small or inactive thyroid and poor katabolism. It may be given with care to the obese individual who is too fat to exercise, in order to reduce his weight to a point where he may exercise. He points out that formerly, owing to a lack of standardization in the preparations of the gland on the market, there was a considerable amount of confusion as to its proper dose. Thus one maker's preparation was about the strength of the present official preparation, another's was two and a half times as strong, while still another's was five-sixths as strong. Now there is the official glandulae thyroideae siccae, 1 grain of which represents 5 grains of the fresh gland. Jump advises beginning with small doses of a fresh preparation of the dried gland, ½ to 1 grain three times daily, and gradually increase it, being watchful for the first signs of intolerance. The diet should contain an increased quantity of proteids in order to save the tissue proteid and a decreased quantity of carbohydrates to prevent glycosuria. While exercise may be dispensed with, it is valuable in that it trains the patient in this important particular. While taking the thyroid, the patient should be under constant observation and should never be allowed to take the drug without advice. If during the administration of the extract the pulse rises above 100, and the patient complains of breathlessness and weakness, the thyroid should be stopped at once and arsenic in small doses given. When relieved of the symptoms of intolerance, the thyroid may be resumed, but the dosages should be reduced. While the patient may relapse when the thyroid is stopped, especially if he relaxes in the observance of his diet and exercise, the same can be said of other methods. In most instances, it is necessary to return to the treatment from time to time.

Because of the diuretic action of thyroid extract, its effect in checking the progress of arteriosclerosis and its destructive action on effete products, Jump thinks it should be of service in cases of interstitial nephritis in which the patients are too fat. He states that he has had under his care for some time two such individuals who have been kept fairly well by this treatment. This statement is especially interesting because about a month after the publication of Jump's paper, Percy ("Jour. A. M. A.," Nov. 9, 1912) published a preliminary statement on the use of thyroid extract in the treatment of nephritis. Percy has treated thirty-five cases of nephritis with thyroid extract with the most gratifying results; two of these cases he reports in detail. He calls attention to the uselessness of most of our methods in dealing with a damaged kidney. He was led to the use of thyroid extract because the first patient to whom he administered it had a cystic goitre. The extraordinary results which followed the use of the extract led to its employment in other cases and always, according to Percy, with the same gratifying results. Following the administration of from 20 to 30 grains of the extract a day, the urine increases in quantity, the urinary solids gradually return to normal, the albumin and casts disappear, and the blood-pressure becomes lower. The urine becomes free from albumin and casts in from four to six weeks.

Percy advises, when the blood-pressure is high as the result of pathological hypertonia, in patients under sixty years of age, to add to the thyroid treatment 1-100 of a grain of nitroglycerin every two hours. In patients past sixty years, he adds to the thyroid and nitroglycerin, potassium iodide, grains 40, in twenty-four hours. He makes no change in the ordinary diet of the patient. Reports from observers on this method of treatment will be looked for with great interest.

Brush and Cornell ("Archives of Int. Med.," May, 1913) report an interesting case of myxedema in a woman. When first seen, in 1905, she presented a typical picture of myxedema. Under thyroid administration, recovery was fairly rapid and complete. Four months after her discharge from treatment she resumed her position as a stenographer, and has kept steadily at work ever since. For the first few years she took the thyroid without interruption, but recently has omitted it for two or three days and taken it for a like period.

Zuber ("Bul. de la Soc. de Pediatrie," Feb., 1913) reports a similar case, that of a boy, who, at the age of eight years, was the size of a child of two years. Under the thyroid treatment he rapidly recovered, and is now a normal boy of fifteen years. In the discussion of this paper, it was pointed out that at times the improvement becomes stationary under thyroid and that it is then useful to combine the extract of other glands with the thyroid. For this purpose, hypophysis extract and epinephrin were recommended.

Schloessmann (Beiträge z. Klin. Chir., Aug. 2, 1912) advises the extract of fresh thyroid gland for the control of hemorrhage in hemophilia. He places the extract on the bleeding point for from five to ten minutes. Attempts to administer the extract internally, or by subcutaneous or intravenous injection, did not succeed, and, besides, untoward effects were not infrequently observed.—Progressive Medicine, Dec., 1913.

THERAPEUTIC USES OF POTASSIUM MERCURIC IODIDE

D. Macfarlan, of Philadelphia, calls attention to the value of potassium mercuric-iodide (K_2HgI_4) formed by dissolving red mercuric iodide with twice its weight or more of potassium iodide in alcohol or water. The formula of a 1 per cent. solution is given as follows: mercuric iodide, 1 Gm.; potassium iodide, 4 Gm.; distilled water, 100 Cc. This solution is irritant to the skin and mucous membranes when locally applied, but in safe dilution comparatively large amounts can be given internally without producing severe symptoms. It seems to have no cumulative action—elimination appears to keep pace with assimilation. Little, therefore, can be said as to its noxious effects on the gastro-intestinal tract when given internally in mild doses, but Macfarlan considers its value somewhat dubious in most if not all the disease in which its internal use has been recommended. He says: "It does, however, seem to have a marked effect on all catarrhal conditions of the mucous membranes, clearing up a common cold, apparently shortening the course of croup and modifying the acute infections of the nose, throat and bronchi. This conclusion has been reached after careful observation and repeated trial. Nearly all patients with catarrhal conditions remark that it gives them great benefit in freeing the sticky mucus. This is particularly true in acute bronchitis. In those cases of gastritis and enteritis that exhibit much mucus the same effect has been noticed. It further acts by its irritation to the mucous membrane as a mild stomachic if used in a careful dose. In spite of frequent trials I have not obtained the effects claimed for it in leucorrhea and in menstrual disorders, for a number of reasons." It has been useful in local application in nasal and sinus diseases, and has been used in syphilis and certain disorders of the skin, especially by the French, and Dr. Archibald Church has had good success with its use by intramuscular injections. But above all these incidental uses, it is as an antiseptic that its field is greatest, it being here practically universal in its possibilities, for in great dilutions its local effects and toxicity seem to be negligible, while its germicidal qualities remain high. "The value of these virtues can readily be realized when the following facts are again referred to: 1. The drug may be taken internally in doses of 5 drops of a 1 per cent. solution without toxic effect. 2. A 1 per cent. solution has but a slight irritant action. 3. A dilution of 1:80,000, or nearly one one-thousandth of 1 per cent., exhibits marked germicidal powers." Macfarlan reproduces W. H. Park's table of antiseptic germicidal strength, in which it outranks all other bactericides, and says that there seems to be no limit to the use of potassium mercuric-iodide in this field. Remarkable effects are produced in erysipilas, acne, pustular affections, lupus, psori-

asis, purulent discharge in minor surgical cases, burns, old leg ulcers, etc. Even felons and boils can be shortened and sometimes be aborted by wet dressings of a 1 per cent. solution. For sterilization of instruments it is excellent, except for tarnishing when the contact is too prolonged, and this can be avoided by the addition of a little sodium bicarbonate to the solution. —Jour. A. M. A., Jan. 3, 1914.

TREATMENT OF HEMOPTYSIS

N. B. Burns, of North Reading, Mass., describes the method adopted in the state sanatorium in North Reading, in the treatment of hemoptysis of known pulmonary origin. Their practice is to substitute for the usual morphine treatment one consisting mainly of depletive purgation. The patient who begins to expectorate blood is made to lie down and keep perfectly quiet, and one one-hundredth of a grain of nitroglycerin is injected hypodermically as soon as possible and perfect quiet is enjoined. A curved basin is placed next his face so that the patient can expectorate without moving, and tight-fitting garments are loosened, but complete undressing is not usually advisable at once. The patient should be encouraged and told that his condition is not likely to be fatal and advised against unnecessary coughing or movement. Except in case of extreme asthenia or gastro-intestinal irritation, a dose of one or two ounces of magnesium sulphate is given as soon as possible from fifteen to thirty minutes after the beginning of the hemorrhage. The physicians of the sanatorium have seen very few cases in which this could not be retained, and the patient is usually anxious to do whatever will help him. The good effects are shown as soon as the purgative action begins. In about eight out of ten cases hemorrhage does not occur. The reasons for adopting this method were, the observation that severe constipation was the rule in patients having hemorrhage and the sluggish bowel condition seemed to be a causative factor. Another reason was the high blood-pressure in these cases of hemoptysis. Two cases illustrating the effects of the treatment are reported. The after-treatment is a matter of keeping the patient at rest, giving non-irritating liquid food, and keeping the bowels clear. The patient is kept flat on his back without a pillow for at least twelve hours, and a bed-pan insisted on. Ice to the chest, which has been employed from the first, is continued only about three hours, but can be replaced if needed, as too long-continued use of it may do harm. For medicine one grain of sodium nitrate may be given every three hours for a time with the idea to reduce the blood-pressure, and calcium sulphite seems to clear up the sputum more thoroughly, and is therefore favored. If the cough is very severe, codeine by the mouth in small doses is preferred to morphine or heroin. For nourishment the patient should receive 4 ounces of cold milk with perhaps a scant teaspoonful of lime-water every three hours. If the sputum becomes clear in eighteen hours, more solid nourishment in the form of dropped eggs may be given. The bed-pan is continued for three or four days, but the patient not allowed to be up for any length of time for at least seven days after the sputum becomes clear. The advantages of this treatment are shown in the absence of fever and slight loss of weight as compared with the effects of the morphine and atropine treatment.—Jour. A. M. A., Dec. 20, 1913.

HYPOPHYSIAL OPOTHERAPY IN DIABETES INSIPIDUS

Farini relates the case of a girl, aged 23, suffering from marked diabetes insipidus successfully treated by means of pituitrin. The father suffered from hemiplegia; the mother died, aged 33, of tuberculous meningitis; four brothers died in infancy from acute illnesses, and four brothers died later of phthisis. One sister is alive and well. The patient was quite well up to 7 years, when she had pneumonia; at 18 years she had a miscarriage, at 22 tuberculous pleurisy and a positive Wassermann reaction. Five months ago she suffered from amenorrhea, and developed symptoms of polyuria and polydipsia; no hypertrophy of the thyroid; the arterial pressure was 110 to 112 mm. The daily amount of urine was 5 to 6 litres, specific gravity 1,000, no albumin, no sugar. There were no signs of hysteria. The skin acted poorly. There was some evidence of syphilitic retinitis, but no optic neuritis. Opium, valerian, iron cacodylate, mercury and pot. iod. were each tried without any effect. She was then given injections of 20 centrigram of pituitrin in 1 Cc. of water and 10 centrigrams of hypophysial extract, and immediate success followed this treatment, as seen in diminished polyuria and polydipsia. Whether this acted directly by replacing an abnormal secretion of the hypophysis, or partly on the ovaries, or on the system

at large, the author does not venture to decide, but there was no doubt as to the directly beneficial effect of the extract. Unfortunately the effect was not lasting, and soon disappeared when the drug was discontinued. No ill effects were observed. The author refers to the physiological and pathological evidence in favor of some connection between the hypophysis and the urinary reaction, and appends a short bibliography of the subject.—Brit. Med. Jour., Nov. 29, 1913.

ADVANTAGES OF DIGIPURATUM

E. Keuper, of Berlin, in a recent paper, discusses the pharmacological principles which induce Gottlieb to introduce digipuratum and mentions as special advantages the good keeping qualities, exact dosage, the presence of digitoxin in the same proportion as found in a good infusion and above all, the absence of saponins, which are responsible for the gastric irritation. Recently, Gottlieb introduced a digipuratum solution, in two forms: a sterile, slightly alkaline solution in ampules for injection, and an alcoholic solution for internal use. Both preparations have been administered by the author during the last five months to a large number of cardiac cases. The clinical symptoms varied considerably; the majority of cases treated suffered from severe pneumonia, bronchitis, complicating kyphoscoliosis, cardiac weakness with advanced peripheral arteriosclerosis, and myocarditis with irregular pulse (patients usually advanced in years), dyspnea, enlargement of the liver with edema, aortic insufficiency with excessive dilatation of one ventricle and one case of lead nephritis with severe decompensation.

In all cases it was very evident that digipuratum acts very promptly in sudden weakness of the heart muscle. A rapid digitalis effect can be obtained by the intravenous administration where there is severe congestion of the stomach and duodenum and where, according to A. Fraenkel, the absorption of digitoxin is interfered with. Exceptionally good results were obtained if digipuratum was first given intravenously and later by mouth; in this way, a pronounced flow of urine could always be obtained.

In only one single case was there vomiting on the third day, but this soon ceased despite the fact that the medication was not discontinued. In all cases where digitalis is indicated, digipuratum exerts the same effect as a potent, fresh infusion of digitalis, without irritating the gastric mucous membrane. Special advantages are keeping qualities, accurate dosage, the ready administration by mouth, and the possibility of also giving the preparation intramuscularly and intravenously.—Therap. Monatshefte, 1913, No. 9.

CAMPHOR AS A CARDIAC STIMULANT

For many years it has been taught that the hypodermic injection of camphor, suspended in oil, is a valuable procedure when a rapid cardiac stimulant is called for, as, for instance, in sudden cardiac failure, shock, nervous collapse, and profound asthenia, such as is encountered sometimes in typhoid fever. Aside from the fact that it has been noted by competent observers that camphor is a rapid cardiac stimulant, nothing is known as to how it acts.

Heard and Brooks ("Amer. Jour. Med. Sciences," Feb., 1913) have contributed a clinical and experimental paper on the action of camphor. Their results are at variance with what has been accepted as a well-established clinical fact. They conclude that the drug exercises a favorable effect upon the heart muscle, when it is poisoned by chloral, muscarine, or strychnine, but that it should never be relied upon as a cardiac stimulant. They also assert that it need not be feared as a toxic agent.

Hare ("Therap. Gazette," April, 1913), in commenting on the conclusions of Heard and Brooks, stated that it is worth while noting that, in most of the instances in which they employed camphor, the patients were suffering from ruptured compensation in valvular disease of the heart. In Hare's opinion, this type of cardiac failure is least suited to camphor, and he, himself has rarely employed it in these cases. Hare's final comment in regard to the use of camphor as a cardiac stimulant is that while we may not be able to explain satisfactorily why it does good, the fact that such is the case is a well established one, if the drug is employed in the proper sort of cases.

Fornaca and Lanza, ("Riforma Medica," Dec. 14, 1912) from an experimental and clinical study of the effects of camphor, found that while it has no antitoxic or bactericidal properties, it does stimulate the heart. It also has a prompt and pronounced effect in raising the blood pressure when given in doses of not over 0.2 to 0.4 Gm. in 1 to 2 Cc. of olive oil. The action grows less as the dose is increased beyond this. The desirability of employing small doses

(not over 2 grains) is emphasized by Hare, who also states that each succeeding dose seems to lose some of its efficiency. In this connection it is interesting to note that Heard and Brooks obtained no definite effects from a dose as large as 50 grains.

Vignard and Arnand ("Rev. de Chirurgie," May 1912) advocate intra-abdominal injections of 1 per cent. solutions of camphorated oil. The solution is prepared by shaking a kilogram of oil with 300 Gm. of 95 per cent alcohol. After twenty-four hours it is decanted, and this process is repeated three times. The traces of alcohol remaining are evaporated on a sand bath, and then the oil is sterilized by nine hours' heating, camphor in proper quantity having been added, and the contained vessel having been carefully sealed to prevent volatilization. From 200 to 300 Cc. are injected into the peritoneal cavity. The effect of the oil is to lessen or prevent peritoneal absorption and adhesions. Furthermore, the camphorated oil exerts a stimulating effect upon the heart and blood pressure, stops vomiting and re-establishes peristalsis. They have not noted any toxic effects from the camphor. In addition to the intra-abdominal injection, they employ proctoclysis and the Fowler position.

Kopping reports a non-fatal case of poisoning in a young man who took 1.2 Gm. of pure camphor for insomnia. Kopping reviews other recorded cases of camphor poisoning. The smallest dose causing symptoms was 0.7 Gm. The lethal dose for adults is not known; as much as 15 Gm. has been taken with suicidal intent with recovery. On the other hand, children have succumbed to a dose of from 0.75 to 1 Gm.—Progressive Medicine, Dec., 1913.

TREATMENT OF CHRONIC INFECTIOUS ENDOCARDITIS WITH INFARCT OF LUNG, SPLEEN AND KIDNEY

W. G. Parker, of St. Louis, Mo., in the "Journal of the Missouri State Medical Association" for October 1913, describes a case of chronic infectious endocarditis and mitral regurgitation with relative tricuspid insufficiency and infarct of lung, spleen and kidney. After discussing the history and diagnosis of the case the author outlines the following treatment.

Treatment should early consist in preventing those diseases productive of endocarditis. Proper rest and treatment continued until complete recovery from rheumatism and the various acute infectious diseases should be insisted on, especially in the young. All those measures which constitute general hygiene and enhance nourishment should be instituted.

In directing treatment toward the heart itself after the endocardium and valves have become injured or diseased, aside from the use of vaccines and other measures to overcome infection, the chief object should be to maintain or increase the myocardial reserve force and overcome insufficiency. General measures toward this end include proper rest and proper exercise, tonics, diet, suitable climate and altitude and manner of life. Each patient will require a special study to correctly determine these factors. Many patients, after a short course of rest and digitalis, attempt to return to their usual duties, giving up treatment as soon as some benefit has been obtained. This is particularly true in the class of patients seen in general hospitals, and is a very pernicious habit. In many cases exercise should be limited to body massage alone, and, this form of exercise is very beneficial to the bed patient unless he be *in extremis*. When the patient is able to be up, so-called graduated exercises, strictly adhered to and not exceeded, may be permitted. Graduated walking is one of the most common applied forms. While rest is very essential, we must remember that the muscle which has been gradually exercised and trained has force in reserve.

Digitalis is usually the best drug for insufficiency, whether manifested by dyspnea, edema, diminishment of the pulse-pressure, dilatation or myocardial degeneration, in which last other stimulants are more or less contra-indicated. It should be given to effect, and when this is not manifest or it disturbs the stomach, strophanthus may be substituted. To the ambulatory patient who can go about comfortably, but becomes dyspneic on exertion, digitalis should be administered in small doses over considerable periods, or every few weeks he should take a course in moderate doses. Tonics, especially iron, are very valuable in nourishing the heart muscle.

When infarction occurs in the lung and occasions symptoms, the treatment should be such as will maintain the tone of the cardiac muscle and conserve the patient's strength. The therapeutic indications are chiefly symptomatic. Codeine or morphine may frequently be required to enable the patient to rest and breathe with some ease. Should infection or gangrene supervene, it must be dealt with by ordinary biological, surgical and medical measures.

Prescriptions

Itching in Gall Stones:

To relieve the itching caused by the deposit of pigment in the skin the hot pack on alternate days, or even every day, is serviceable. A very efficient local application for this purpose is the following, which should be applied with a sponge and allowed to dry on the skin.

Acidi Carbolici ..... ℥vijss
Glycerini ..... f. ℥ij
Aquæ ..... f. ℥vj

—Fussell.

Senile Pruritus:

Acidi Sulphurici Dil. ..... ℥lxxv
Syrupi Rubi Idæi ..... f. ℥j
Aquæ Destillatæ ..... ad f. ℥vj

M. Sig.: One tablespoonful every two hours.

Mucous Colitis in Children:

Whipham states that it is necessary to exclude sugars from the diet and to administer alkalies to dissolve the mucus. The following may be given before meals:

Potassii Bicarbonatis .....
Potassii Citratis ..... āā grn. v
Tinct. Nucis Vomicæ ..... ℥ij
Inf. Gentianæ Comp. ..... ad f. ℥ij

A rhubarb and soda powder, together with 2 grains of gray powder, should be given every night or every other night.

Epididymitis:

Ichthyolis ..... f. ℥vj
Ung. Hydrargyri .....
Ung. Belladonnæ ..... āā ℥iv
Cerati Plumbi Subacetatis ..... ad ℥ij

M. Sig.: Apply to scrotum freely twice or thrice daily, and support with large suspensory bandage.

Chronic Cystitis:

Both boric acid and benzoic acid are useful adjuvants to the treatment of chronic cystitis through their antiseptic effect on the urine, each in 5-grain doses, rapidly increased to 10 grains. They may be given jointly, as in the following prescription:

Sodii Biboratis .....
Acidi Benzoici ..... āā grn. x
Inf. Buchu ..... f. ℥ij

M. Sig.: Three times a day.

—Tyson.

Neurasthenia:

Acidi Phosphorici Dil. ..... f. ℥ij
Fl. Ext. Cocæ ..... f. ℥vj
Tinct. Nucis Vomicæ ..... f. ℥ij
Syr. Zingiberis ..... f. ℥iss
Aquæ Menthæ Pip. ..... ad f. ℥vj

M. Sig.: Tablespoonful after meals in water.

Pleural Effusion:

Syrupi Ferri Iodide ..... f. ℥ij
Potassii Iodidi Merck ..... ℥j
Syr. Sarsaparillæ Comp. ..... f. ℥j
Essen. Pepsini ..... ad f. ℥ij

M. Sig.: A teaspoonful every four hours, diluted; the dose to be doubled at the end of four days if well borne by the stomach.

—Andrews.

Hypertrophy of Tonsils:

Iodi Pur. ..... grn. j
Potassii Iodidi ..... grn. ij
Tinct. Opii ..... ℥xx
Glycerini ..... f. ℥iv

M. Sig.: Paint the tonsils morning and evening, and use as a gargle a teaspoonful to a glass of warm water.

—Moure.

Malarial Cachexia:

Euquininæ ..... grn. lxxv
Ferri et Potassii Tartratis ..... ℥ij
Sodii Arsenatis ..... grn. j
Glycerini ..... f. ℥jss
Aquæ Destillatæ ..... ad f. ℥viij

M. Sig.: Two to four teaspoonfuls daily. (Each teaspoonful contains about 1¼ grn. euquinine, 1 64 grn. sodium arsenate, and 2 grn. iron.)

—Concetti.

Nicotine Poisoning:

Adonidin ..... grn. j
Ammonii Carbonatis ..... grn. xviij
Camphoræ ..... grn. vj

M. div. in Pulv. No. xij.

Sig.: One powder three times a day.

—Stern.

Vesiculous Eczema:

Pulv. Camphoræ ..... ℥ss
Pulv. Zinci Oxidi ..... ℥iij
Glycerini ..... ℥xl
Ung. Benzoatis ..... ℥j

M. Sig.: Apply locally.

—Duhring.

Periostitis:

Potassii Iodidi ..... ℥ij
Ammonii Iodidi ..... ℥j
Tinct. Cinchonæ Comp. ..... f. ℥iij

M. Sig.: Teaspoonful well diluted with water after meals.

Strangury:

Aceti Scillæ .....
Spt. Aetheris Nitrosi ..... āā f. ℥ij
Aquæ Anisi ..... ad Oj

M. Sig.: A wineglassful every hour.

—Waring.

Asthma:

Potassii Iodidi ..... ℥ijss
Tinct. Lobeliæ ..... f. ℥iv
Syr. Sarsaparillæ Comp. ..... ad f ℥ij

M. Sig.: Teaspoonful every two hours.

—Anders.

Chronic Bronchitis:

Potassii Iodidi ..... ℥ij
Tinct. Belladonnæ ..... f. ℥ijss
Spt. Aetheris Comp. ..... f. ℥j
Fl. Ext. Pruni Virg. ..... f. ℥ij
Syrupi ..... f. ℥vj
Aquæ ..... ad f. ℥iij

M. Sig.: A teaspoonful in water thrice daily.

Thompson.

Lumbago:

Potassii Iodidi .....
Potassii Carbonatis ..... āā ℥j
Tinct. Aconiti Rad. ..... f. ℥ij
Aquæ ..... f. ℥x

M. Sig.: Poison. Apply locally every three hours.

—Erichsen.

MERCK'S ARCHIVES

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FOR THE GENERAL PRACTITIONER
PRESENTING A
REVIEW OF THERAPEUTIC PROGRESS

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JANUARY, 1914

EDITOR'S NOTES

Luminal the Powerful Hypnotic—Treatment of By-Effects From

Reports of by-effects from luminal point to caution and small doses in the use of this new and most powerful hypnotic. Earlier reports, such as that of Dr. Eder, of the Moabit Hospital, Berlin, were to the effect that in doses of 0.2 to 0.4 gm. (3 to 6 grains) luminal produced a deep sleep in most patients, without after-effects. In the Moabit Hospital, luminal and luminal-sodium were administered to 150 patients, with generally excellent results. The chief usefulness of luminal will doubtless be found in cases of mental excitement, in epilepsy, and in cases of insomnia, in which milder hypnotics, such as veronal and bromural, are not effective.

Frederic J. Farnell, of Providence, R. I., reported two cases in the "Jour. Amer. Med. Association" (July 19, 1913), in which toxic symptoms set in after two doses given on succeeding nights, indicating a cumulative action. The first case was one of hysteria, in which 0.3 gm. (5 grains) were given the first night with unsatisfactory results. The dose was repeated the second night, and sound sleep set in. On being awakened the next morning the woman showed signs of drug toxemia—scanning speech, paraphasia, ataxia and astasia, and a general somnolent tendency, all lasting about twelve hours. Her pupils were dilated and knee-jerks diminished. There were no disturbances of sensation. The second case was one of chronic insomnia, in which various hypnotics and measures for relief were unavailing. The man was given 0.6 gm. (10 grains) at 10 p. m. and 0.3 gm. (5 grains) an hour later. At 2 a. m. he was still wide awake. Veronal, 0.2 gm. (3 grains) was then given. He had to be awakened at 10 o'clock, when he showed symptoms of intoxication, which continued with very long periods of sleep for forty-eight hours, when he gradually returned to normal. The symptoms were the same as in the first case, with gastro-intestinal disturbances.

E. Blichert ("Ugeskrift for Læger," Copenhagen) states that in five of the thirteen cases in which he administered luminal, signs of intoxication were evident; in two no effect was observed; in six the drug had the anticipated action without by-effects; but in one case after two weeks and in four earlier there were unmistakable signs of toxic action. In three in the latter group the luminal had no therapeutic influence at all. He cites communications in German literature in regard to a toxic action from luminal: Eder had two cases of a luminal eruption in 150 and Graeffner two in 72 cases. The exanthem in Blichert's cases was very pronounced; in one case after it had subsided it reappeared in full intensity after a week's interval without more of the drug having been taken in interim. The eruption occurred in three of the four cases of pronounced toxic action. The dosage was 0.2 or 0.3 gm. (3 to 5 grains) three or two times a day, or 0.1 gm. (1½ grains) in the morning and 0.2 gm. in the evening. In some of the cases veronal had been given at the same time or alternating with the luminal; but in two of the cases with most pronounced toxic action the luminal alone had been given.

Dr. George E. Barnes (correspondence) reports in detail a clinical study of the comparative merits of veronal and luminal in a pronounced case of neurasthenia with insomnia.

On the day after taking 0.3 gm. (5 grains) of luminal and sleeping seven and one-half hours the patient experienced general stimulation, occasional nausea, a diminished force and increased frequency of heart-beat and a lowered arterial tension. On the second day after the above-mentioned dose the feeling of pseudo-stimulation had largely but not entirely disap-

peared and there was noticeable a consequent feeling of nerve weakness. There was much less nausea. The action of the heart and the condition of the arteries were improved. On the third day all the symptoms had further decreased, except that the feeling of nerve weakness had slightly increased.

On the third night, after the first dose, the patient took 1½ grains of luminal. On the next day there was a moderate degree of pseudo-stimulation, and there was only the faintest trace of nausea. The heart action and the arterial tension were appreciably affected. On the second day the symptoms had decreased, except that there was a marked feeling of irritation in the whole nervous system. On the third day some effect on the heart and arteries could still be observed. There was the same kind of irritation in the nervous system, but it was somewhat diminished and to it there was added a feeling of nervous weakness.

About seven weeks after the preceding medication the patient received on each of three consecutive nights 0.15 Gm. (2½ grains) of luminal, and on the day following each dose he did not feel intoxicated and he was decidedly restful, but his heart and arteries were affected similarly as before. However, on the following nights no hypnotic was given, and on and after the second day after the last dose of hypnotic there appeared a weakness and irritation of the nervous system which gradually passed off in the next few days. The condition of combined irritation and weakness of the nervous system was marked. It increased to a certain point and then gradually decreased. The writer never knew of the occurrence of these symptoms after the use of veronal.

It seems to Dr. Barnes that a consideration of all the facts leads to the conclusion that luminal has some toxicity, varying with the nature of the case, being slight, sometimes possibly almost negligible, in the sthenic, and being considerable in the asthenic. As luminal differs from veronal in chemical constitution only in the presence of the phenyl radicle in place of one ethyl radicle, he infers that the characteristic effects produced by luminal are due to the phenyl radicle.

After all that has been said above, however, Dr. Barnes declares that "luminal is the most certain and effective hypnotic existing today." Formulating probable indications and contraindications for its use, Dr. Barnes concludes: "I should say that it should never be used in asthenic cases, but that it might properly be used in sthenic cases occasionally when there is a positive demand for a strong hypnotic, especially when there is need for hypodermic administration; that veronal in any case in which it is sufficient is always preferable to luminal; that when veronal is not sufficient, the best results may sometimes be obtained by reinforcing it with a minimum dose of luminal instead of administering luminal alone; that whenever luminal is used it should be in the smallest efficient dose, which should be carefully determined for the individual case at the particular time."

The treatment of toxic effects from luminal is the same as for those from veronal. The stomach should be washed out at once, and when clean a saturated solution of some saline in large dose should be introduced in order to remove all of the drug that has not yet been absorbed. After that the indications are two-fold—to combat symptoms as they appear, and to wash the drug out of the circulation as much as is possible. In mild cases it will be sufficient to keep up the activity of the kidneys by means of copious draughts of water, Murphy salines and diuretics. In severe cases, the treatment would be almost identical with that of uremia (hot packs preceded by pilocarpine injections, milk diet, venesection followed by hypodermolysis or intravenous infusion.

Styracol in Pulmonary Tuberculosis

A. Muehsam, of Berlin, writes that he has employed styracol, a tasteless guaiacol preparation, extensively in dispensary and in private practice. He usually gave it in combination with injections of tuberculin free from albumose. Most patients attended to their work while being treated and appeared regularly during office hours.

According to the author's experience, styracol is a valuable adjuvant in the treatment of pulmonary tuberculosis. The tablets were readily taken by the patients, preferably after meals. Eructations or after-taste did not persist. In most cases, there soon developed a healthy appetite, despite the fact that in most cases of pulmonary tuberculosis, lack of appetite is a marked symptom. Hand in hand with the ingestion of more food, there generally was a pronounced gain in weight. The purulent expectoration diminished in quantity and changed in quality from purulent to mucoid. As it is well tolerated, he believes the drug could also be used for children.—Die Therap. d. Gegenwart.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Degeneration of the Neuron.—F. W. Mott in the "Lancet" points out that degeneration of the neuron may occur from an inherent lack of durability of certain correlated functional systems, as occurs in certain diseases which affect members of families at the same age in life and often generation after generation—e. g., Huntington's chorea, hereditary ataxia. Degeneration of the neuron may result from direct injury or local extension of inflammation or by ischemic softening due to obstruction of the blood supply of vascular occlusion; the degeneration that results therefrom is secondary. But when for whatever cause nervous tissue disappears the neuroglia ation being the primary cause is incorrect; the tion—a law formulated by Weigert in 1890. The replacement of the nervous tissue by the neuroglia tissue causes a "sclerosis." But the term "sclerosis" in the sense of a neuroglia proliferation being the primary cause is incorrect; the sclerosis is the effect, not the cause. A pure primary decay of the neuron has been termed by Sir William Gowers "abiotrophy." Many of these conditions of abiotrophy are associated with chronic inflammatory changes, and it is very difficult to say how far these cause the decay of the neuron or are the result of it; certainly a proliferation of neuroglia tissue may result from simple atrophy and decay of the neuron, but a perivascular lymphatic infiltration with lymphocytes and plasma cells is evidence of a reaction to the poison. There are two diseases in which this perivascular cell infiltration, together with neuroglia proliferation is particularly marked and more or less universal in the central nervous system. They are the diseases caused by two specific protozoal organisms—the *Trypanosoma gambiense* and the *Treponema pallidum*.—Med. Record.

Amnesia.—Two cases of temporary amnesia, one from the excessive use of tobacco, the other a result of malarial infection, are reported by S. P. Goodhart, of New York. The first patient was a prominent lawyer and teacher, an habitual user of strong tobacco, who had indulged in unusual excess on account of recent mental and emotional stress. The amnesia appeared suddenly with a dazed condition for a half hour, followed by three weeks of nearly complete forgetfulness of past and current events, but apparently without any mental symptoms other than those dependent on the amnesia. Then it gradually began to disappear, but the complete rehabilitation was as sudden as the onset, and seemed to take up the normal mental activity at the point where it had been interrupted. Withdrawal of tobacco, rest and nutritional care were all the treatment used. This was several years ago; since then slight amnesic attacks have followed excessive use of tobacco and have been relieved by similar treatment. The second patient was a woman teacher, aged 27, whose mother suffered from epilepsy and who was herself somewhat high-strung and nervous. The attack, in this case, was sudden after intense emotional strain and fatigue and was immediately preceded ceded by severe headache. The amnesia was complete for the events of the previous forty-eight hours, but less so for events more remote. Malarial symptoms appeared two days later, and the case was a typical tertian with finding of the plasmodium. The amnesia continued long after malarial symptoms ceased and there is yet only partial restoration of past recollections. The first case is clearly a functional one and most unusual, and the second, as a prodrome of malaria, is still rarer. Goodhart has not been able to find another purely functional case, like the first, described in medical literature, and both cases are quite different from any characteristic tobacco or malarial psychoses.—Jour. A. M. A., Dec. 27, 1913.

Control of Cancer.—J. C. Bloodgood, of Baltimore, says that while we have evidence that cancer can be cured if taken in time, many physicians are still skeptical and the patients themselves sometimes question the diagnosis when they find themselves relieved. We have therefore to meet this skepticism in both the profession and the public. The proportion of cures of fully developed cancer—i. e., cancer in which there can be no doubt as to the histologic evidence of malignancy—is small, but cures have been made and the possibility of increasing their number is by no means out of the question. In the Johns Hopkins Hospital Surgical Clinic 80 per cent of the cases that could be diagnosed only by exploratory incision or after operation were cured, while in the cases that could be diagnosed as cancer by retraction of the nipple or skin adhesion the proportion of cures after five years was 25 per cent, but both tumors alike were pathologically the same. It is the same type of cancer, yet the patient has eighty chances in one case to twenty-five in the other. This needs to be impressed on the profession and the public: that waiting for a possible clinical diagnosis means greatly lessening the chance of cure. This is true of all types of cancer in all parts of the body. Everywhere that we find cancers we also find tumors or growths which histologically are not cancer, and Bloodgood, in studying 820 pathologically developed cancers, found no well-taken history that did not reveal a previous defect that might be accepted as one of these so-called benign growths. He calls these "precancerous" growths, and believes that with their early recognition we can greatly reduce the cancer mortality, especially that from external or mucous membrane cancer. In cancer of the internal organs it is more difficult to demonstrate the precancerous lesion. In cancer of the stomach the patient is fortunate if the appearance of obstruction is early, and his chances are greatly lessened if the early symptoms are slight. In curable cancer good surgery is important, and delay or too restricted operation may be disastrous. Bloodgood goes at some length into the description of the groups of cases of malignant disease, those hopeless and inoperable which can at best have only palliative measures for their relief; those clinically malignant but offering a possible surgical cure, the clinically benign which are at first hopeful, and the precancerous cases, on the timely recognition of which our hopes of the control of cancer mainly depends. In most external cases of the last type the lesion can be cut out under local anesthesia at slight expense and inconvenience. In any apparently benign growth a properly performed operation does no harm, and if malignancy is found existing it may remove a probable focus of future malignant disease. It is the education of the public on these matters that is needed at the present time.—Jour. A. M. A., Dec. 27, 1913.

Book Notes

Dorland's American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, M. D., editor "American Illustrated Medical Dictionary." Eighth edition revised and enlarged. 32mo. of 677 pages. The merits of the previous editions of this dictionary will assure it of a hearty welcome on the part of the medical profession. The task of the lexicographer is not an easy one, and Dr. Dorland is to be congratulated for the conciseness of his definitions, most of which are not more than a line in length. A vast number of new terms are constantly appearing in surgery, pathology, clinical medicine, laboratory methods, chemistry, dentistry, veterinary medicine and nursing. The eighth edition defines several hundred more words than the previous one. Although the work cannot replace the larger illustrated dictionary, yet it must prove of more than ordinary value to both practitioner and student. It contains also a comprehensive table of doses in both the apothecaries and metric systems. The mechanical features are excellent, the paper though very thin is opaque and the whole bound in a beautiful red leather. (W. B. Saunders Company, Philadelphia and London. 1913. Flexible leather, gold edges, $1.00 net; thumb index, $1.25 net.)

Diseases of the Nervous System for the General Practitioner and Student. By Alfred Gordon, A. M., M. D. (Paris.) Second edition, revised and enlarged with 169 illustrations. The fault of most text books on neurological subjects is that they are written from the viewpoint of the expert neurologist and are far too technical for the student or average practitioner. This fault, however, is not at all apparent in the present volume for, though the author has covered the entire field and done so in considerable detail, yet withal in so plain, logical and concise a manner that the work will undoubtedly prove of more than average value to teacher, student or practitioner. The first three chapters are devoted respectively to the anatomy and physiology of the central nervous system; the method of examination for diagnosis of nervous diseases, and cerebral localizations. The various nervous diseases are then taken up seriatim. There are also chapters devoted to diseases of the sympathetic system, to nervous symptoms produced by intoxications, and to nervous symptoms caused by special infections. Each chapter is preceded by a paragraph on the pathology of the specific disease, after which are taken up in order the symptomatology, differential diagnosis, course, mode of termination, prognosis, etiology and treatment. The mechanical features of the book are excellent and the large clear type makes reading easy. The illustrations, many of them in colors, add much to the clearness of the text. (P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. pp. 617. 1913. Price, $4.00 net.)

The Practice of Medicine. A Text Book for Practitioners and Students with Special Reference to Diagnosis and Treatment. By James Tyson, M. D., LL. D., and M. Howard Fussell, M. D. Sixth edition, revised and re-written, with six plates and 179 other illustrations. For years Tyson's Practice has held a front rank and has been a standard. In this new edition not only has much been re-written but many new sections have been added. To keep the work within reasonable size (1200 pages) the addition of the new matter has necessitated the omission of a number of paragraphs hitherto devoted to the history of the development of our knowledge of the various diseases. For the same reason the valuable chapter on Parasites by Dr. Allen J. Smith had to be curtailed. The new subjects that have been introduced include diseases of the pituitary gland, trypanosomiasis, Rocky Mountain fever, diverticulitis, bacteriuria, melanuria, oxaluria, phosphaturia, indicanuria, cystinuria, erythremia, diseases of the thyroid gland, hypothyroidism and hyperthyroidism, hypertropic pulmonary arthropathy, osteitis deformans, leontiasis ossea, osteogenesis imperfecta, osteopsathyrosis, and oxycephaly. There is also an excellent section on pellagra by Prof. Wood, and one on the phenosulphonephthalein test by Dr. A. Randall. The work throughout is scholarly and above all it is accurate and complete so far as our knowledge stands to-day. We know of no better work. (P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. Cloth, 1211 pages and 185 illustrations. Price, $5.50 net. 1913.)

Genito-Urinary Diseases and Syphilis. By Edgar G. Ballenger, M. D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor Journal-Record of Medicine; Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hospital for Nervous Diseases, etc., Atlanta, Ga., assisted by Omar F. Elder, M. D. The Wassermann Reaction by Edgar Paullin, M. D. Second edition revised. 527 pages with 109 illustrations and 5 colored plates. So rapid are the advances being made in the field of urology to-day that text books are in need of frequent revision. It is thus that the authors of this present work have found it expedient so soon to have issued a second edition of their excellent work. Though some of the less common diseases of the genito-urinary tract have been treated rather briefly, this deficiency has been more than made up by the emphasis that has been laid upon the commoner diseases, notably gonorrhea and syphilis. The authors have wisely recognized a very great need in a work of this kind in that they have explained, step by step, the technique required in the treatment of each condition. This is a point wherein too many of the more pretentious works lose much in value to the average practitioner. For the student, the summaries that have been added to each chapter will aid in preparation for quizzes and examinations. The work closes with an excellent chapter on the Wassermann Reaction by J. Edgar Paullin. (1913. E. W. Allen & Co., Atlanta, Ga. Price, $5.00 net.)

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., assisted by L. F. Appleman, M. D. (Dec. 1, 1913.) This number opens with a comprehensive chapter by E. H. Goodman on the recent progress made in the domain of diseases of the digestive tract and allied organs, the liver, pancreas, and peritoneum. In a chapter on the diseases of the kidneys, J. R. Bradford discusses at length the subjects of orthostatic albuminuria, renal circulation and function, nephritis, retention of foreign protein

by the kidney, and nephritic hypertension. The genito-urinary diseases are handled by C. W. Bonney and an especially interesting though lengthy article on the surgery of the extremities is contributed by J. C. Bloodgood. The "Practical Therapeutic Referendum" is supplied as usual by H. R. M. Landis. (Lea & Febiger, Philadelphia and New York, per annum in four paper bound vols., $6.00.)

Useful Remedies. An Epitome of the Properties and Uses of the Articles Included in the List of Important Medicaments Selected by the Council to Serve as a Ready Reference for the Medical Practitioner, a Suggestion for Materia Medica Instruction in Medical Schools, and as a Basis for the Examination in Therapeutics by State Medical Examining and Licensing Boards. Compiled by the Committee on Useful Remedies of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago. The object of this booklet is to afford a fundamental list of drugs with which all medical students and practitioners might be expected to be familiar, and to which, therefore, state examining and licensing boards might largely or entirely confine their examinations in materia medica. The drugs listed are those considered as among the most important ones of the U. S. P. and N. N. R. Each drug is described as to its physical appearance and other characteristics, and in addition there are stated its average dose, properties and uses, and the preparations of which it is the chief constitutent. A valuable table is also appended showing the recorded solubility of substances included in the list of important medicaments, and also a pharmacologic index, showing what drugs are indicated in different conditions, each drug being classified as to its action. The object of the book is commendable, and the book will be of undoubted benefit to the student and practitioner.

Essentials of Prescription Writing. By Cary Eggleston, M. D., Instructor in Pharmacology, Cornell University Medical College, New York City. The object of this book is to afford the student a good means of training in the proper construction and writing of the prescription.

The Latin grammar concerning the prescription is given briefly yet quite comprehensively, and this is followed by chapters on weights and measures, practical prescription writing, doses, vehicles, incompatibles, modes of administration, and suggestions for prescribing official preparations. The book is well adapted for use with or without a teacher, and should prove serviceable alike to the student and to the practitioner who wishes to brush up a bit in form. (32 mo., 115 pages. W. B. Saunders Co., Philadelphia and New York. 1913. Cloth, $1.00 net.)

Materia Medica, Pharmacology, Therapeutics and Prescription Writing. For Students and Practitioners. By Walter A. Bastedo, Ph. G., M. D., Associate in Pharmacology and Therapeutics at Columbia University. The author's wide experience has enabled him to present in his new work the up-to-date data in the fields of pharmacology and therapeutics. The remedies whose action and effects are described, are classified and treated of according to their physiological action, *e. g.*, cathartics, circulatory stimulants, diuretics, antipyretics, etc., and many are illustrated by heart tracings or other appropriate figures. Many other remedies also are briefly, though satisfactorily described, especially the more recent organic ones. Much space in particular has been devoted to a discussion of digitalis, and the action of the drug has been gone into most thoroughly. A chapter on prescription writing, abbreviations, incompatibilities, etc., and a satisfactory index, complete are also added. The text is well written, in clear and direct style, will prove most welcome to all who are interested in materia medica, pharmacology or therapeutics. (8 vo., pp. 602. Illustrated. W. B. Saunders Co., Philadelphia and London. Cloth, $3.50 net. 1913.)

Taschenbuch der Therapie mit besonderer Berücksichtigung der Therapie an den Berliner, Weiner, u. a. Deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer. Zehnte Ausgabe. This handy little volume from the pen of the talented editor of the "Klinische-therapeutische Wochenschrift" is now presented in its tenth edition. Into its 474 pages is crowded a wealth of handy information including a comprehensive list of diseases with their therapeutic indications, a list of drugs with their physical, chemical and therapeutic properties; a list of important sera; a chapter on diagnosis and therapy of acute poisoning; a short chapter on "first aid," and a great number of useful tables, diagrams and facts of medical interest. (A. Stuber's Verlag, Würzburg. Price, M. 2.50.)

Beiträge Zur Klinik der Infektionkrankheiten und Zur Immunitätsforchung. Herausgegeben von Prof. Dr. L. Brauer. II Band I Heft. This number includes the following articles: M. Deussen, "Epidemiology of Acute Epidemic Poliomyelitis with Special Reference to the Rhein-Westphalian Epidemic of 1909"; H. Schottmüller and W. Barfurth, "Etiology of Adnexal Disease"; P. Römer and Dr. Viereck, "Diphtheria"; O. Gaupp, "Experiences with the Krauss Tyhpus Serum"; E. Sachs and P. Römer, "Bacteriemia in Abortion"; E. Stadler, "The Role of the Blood Vessels in Acute and Chronic Infectious Diseases"; H. Sowade, "Methods of Preparation and Culture of Spirochaetae." (A. Stuber's Verlag, Würzburg, Germany. Price, Mk. 8.)

Pamphlets Received

Contributions from the U. S. National Herbarium. Vol. XVI., No. 6. "Three New Genera of Stilt Palms from Columbia With a Synoptical Review of the Family." With 12 plates. By O. F. Cook and C. B. Doyle. Washington Government Printing Office.

Das günstigste elterliche Zeugungsalter fur die geistigen Fahigkeiten der Nachkommen von Dr. Vaerting. (A. Stuber's Verlag, Würzburg, Germany. Price, Mk. 1.20.)

Knoll's Mitteilungen für Arzte. Knoll & Co., Ludwigshafen, London and New York.

Riedel Archiv. Ergänzung zu Riedell's Berichten. Riedel's Mentor. Riedel & Co., Berlin-Britz and New York.

The Surgical Treatment of Chronic Intestinal Stasis. By U. S. Bainbridge, A. M., Sc. D., M. D. Reprinted from the American Jour. Gastro-Enterology, July, 1913.

Nineteenth Annual Report of the Industrial School for Crippled and Deformed Children, 241 St. Botolph St., Boston, Mass.

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SLEEPING SICKNESS AND BIG GAME.—W. Yorke states that in view of the impossibility of exterminating the tsetse fly and of the equal impossibility of removing the population from the fly belts, one must consider the only way that remains of combating sleeping sickness, namely, the advisability of attempting to destroy the reservoir of the virus. It is obvious that the mere isolation of infected human beings is futile in view of the fact that the main reservoir of the virus is the blood of the big game. Since the beginning of last year, when Kinghorn and the author announced the fact that a large proportion of the wild fauna of Africa harbored the trypanosomes of man and domestic stock, a considerable polemic has arisen over the question of the advisability of attempting to exterminate the big game in the vicinity of human habitations in fly areas. The author believes that a decisive scientific experiment should be undertaken with a view to ascertaining the effects of completely eradicating the game in a limited area. As some years must elapse before the results of such an experiment would be known, he suggests that in the meantime the restrictions relating to the killing of game by Europeans and natives should be removed in those portions of the fly areas which are in the vicinity of human habitations.—Brit. Med. Jour.

THE OLFACTORY SENSE OF INSECTS.—A great number of facts of the life of insects can hardly be explained excepting by admitting a particularly powerful olfactory sense in these animals. The examples are numerous; if, in an ant hill, an ant of the same species as those that inhabit it, but belonging to another swarm, tries to penetrate, it will immediately be expelled. Sometimes the hypothesis has been supposed of a sort of language allowing each individual to make itself known, but deafness is general in the class of insects, and ants in particular are absolutely deaf. So then there only remains the odor special to each swarm which appears to constitute a mode of identification. In the same way, when the corpse of a small mammiferous animal is becoming decomposed in a field, a legion of sylphs and necrophors, strangers to the immediate neighborhood, coming sometimes from a distance of several kilometres, arrive to lay their eggs there, guided, it would seem, merely by their sense of smell. It is also their scent which leads the sacred scarabeus to the excrements of herbivorous animals, of which it will make a ball in which to place its progentiure, etc. But is it really scent that guides the insect? Very little is known on the subject; the only precise experiments are due to Fabre, the learned entomologist of Serignan, to whom are due those marvelous studies on the life of insects that he has so well related in his "Entomological Mémoires." The starting point of these experiments was the sexual attraction in butterflies, well known to entomologists, which enables individual insects to meet in spite of the often considerable distance and difficulties of the way. Fabre enclosed females of different species of butterflies in a metallic trellis, and found that numerous males arrived. A remarkable particularity of these experiments was that one of the specimens studied had very rarely been observed in the region. On the contrary, if the females were shut up under an hermetically closed glass globe the attraction ceased, but all objects, branches, stuff, paper, on which they had rested for some time was seen to be possessed of the same attractive properties. Fabre has concluded from these results that a particular odor exists incapable of affecting our sense of smell, but which can be transmitted to a great distance. Although it is bold to generalize, it seems possible to admit that insects are endowed with a wonderfully strong olfactory sense which no other animal possesses.—Chemical News.

THE LASTING INFLUENCE OF JOHN HUNTER is one of the amazing facts of modern medicine. Hippocrates influenced medieval medicine a longer time because he was a great observer and there was little advance in any science for nearly two thousand years. It seems that the medical science of the Homeric Greeks was built up by invading northmen who were vastly more intelligent than the earlier inhabitants who were conquered and enslaved or at the best were excluded from citizenship like we excluded American Indians. When the intruding type died out, there was no one to carry on the science and "native" physicians then blindly followed the teachings of the ancient masters. There was no subsequent advance until northmen again took it up, and it required many centuries for the science to drift north into the hands of these people. When they did grasp what had already been learned, what a revolution occurred! It is now known that the modern medical work of Spain, Italy and to some extent France also, was the work of northmen who had drifted south or whose immediate ancestors had. As they disappeared, medicine received more and more of alvances from the N. W. Corner, Pasteur, Lister, Virchow, Koch, and the interminable list of those still living. Hunter seems to have been the first to study on the true scientific principle of experimental or observed facts. Dr. J. M. Bruce in his Harveian oration, (Lancet, Nov. 1, 1913), has gone over the progress of medicine since Harvey's death in 1657, and has shown that practically everything of value has grown from the foundation laid by Harvey. There is no question that all these leaders and pioneers would have worked on scientic lines instead of following blind precedent like the medieval southmen, and would have accomplished great things, but it seems that the work of Harvey gave a start to all later advances. The amazing fact is the slowness with which we took up Harvey's true conception of infection and immunity. To be sure, we had to wait for the invention of the microscope to demonstrate the cause, but in the interval there were few if any of sufficient genius to prove it circumstantially or by statistics. Similarly the fact of evolution by natural selection waited too long, for Harvey conceived it accurately. Perhaps it might be well for all of us in our leisure moments to go back to the writings of these

first moderns and see if some of them have not given hints which explain present day problems. Lettsom of London for instance in the 18th century "carried his patients (typhus and possibly typhoid) out into the cold fresh air and wondered at the long neglect of the method" and Fothergill used "free air" in "putrid sore throat." We notice the pioneers only when someone else rediscovers the facts. Mead outlined modern sanitation in 1720. It is a pity that we are all too busy with the future to take time to find out whether the past has not already found what we are after. The History of Medicine is therefore of such great value to investigators and we regret it is so universally neglected. Lister's discovery should have been antedated 200 years, for Hunter said: "I have myself (says he) for experiment's sake occasionally pricked my hand with a clean needle, and then having rubbed the same needle on the teeth of a spider I have pricked my hand in another place. I could not by my simple sensations perceive any difference between the two punctures. Nevertheless there was a capacity in the skin to distinguish the one from the other, for the part pricked with the envenomed needle immediately contracted into a tubercle, and by and by became red and hot and inflamed, as if it collected and girded itself up for a contest with the poison of its overthrow." Strange that no one thought of putting this experiment to practical use for 200 years. Literature must be full of such hints.—American Medicine.

American College of Surgeons was organized at a meeting held in Washington on Monday evening, May 5, 1913. Four hundred and fifty surgeons of the continent of North America came together at the invitation of an Organization Committee which had been appointed by the Clinical Congress of Surgeons of North America at its meeting in November, 1912. This committee consisted of Edward Martin of Philadelphia, Emmet Rixford of San Francisco, John B. Murphy of Chicago, Rudolph Matas of New Orleans, Albert J. Ochsner of Chicago, Charles H. Mayo of Rochester, Minn., Frederic J. Cotton of Boston, George Emerson Brewer of New York, J. M. T. Finney of Baltimore, W. W. Chipman of Montreal, George W. Crile of Cleveland and Franklin H. Martin of Chicago.

The invitations, which resulted in this large gathering of surgeons in Washington, were extended by the Organization Committee after a carefully prepared campaign in which each large university city on the continent was visited by a member of the committee who met, in person, a group of selected men brought together by a committee of three in each locality, which committee had been authorized by the Organization Committee to extend an invitation to the surgeons in their locality to meet the representative of the Organization Committee. These five hundred men who were invited to the meeting in Washington, four hundred and fifty of whom responded, represented all branches of surgery and surgical specialties.

At this meeting the Committee on Organization presented a definite tentative plan, which plan included a call of the meeting, the presentation of by-laws, the presentation of resolutions, and a plan for the completion of the organization by the election of governing bodies and executive officers.

The Call of the Meeting was read by Franklin H. Martin, Secretary of the Committee. This call summarizes the work for which, in the opinion of the committee, the American College should stand:

"First. It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine who is allowed to perform, independently, surgical operations in general surgery or any of its specialties.

"Second. It should consider the desirability of listing the names of those men who desire to practice surgery and who come under the authorized requirements.

"Third. It should seek the means of legalizing under national, colonial, state, or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons.

"Fourth. It should seek co-operation with the medical schools of the continent which have the right to confer the degree of M. D. under the present recognized standards, and urge these colleges to confer a supplementary degree on those of its graduates who have, in addition to their medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories, and actual operative surgery.

"Fifth. It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians in order that the laity as well as medical men may distinguish between the men who have been authorized to practice surgery and those who have not."

The founders' organization was completed by the election of a chairman and a secretary, and the authorization of an order of business. The meeting then proceeded to complete the organization by adopting by-laws, rules and regulations and electing governors, regents and officers.

Leucocytosis.—In a febrile case with difficulty in the diagnosis the presence of a leucocytosis points to pneumonia and away from influenza or typhoid fever.—Hospital.

A not uncommon cause of persistent pain in the knee is bursitis sartorius, semimembranosus beneath the inner hamstring tendon insertions.—Amer. Jour. Surg.

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THE RELATIVE TOXICITY AND EXCRETION OF METHYL AND ETHYL ALCOHOLS.—Pharmacologically it is well known that the toxicity of the alcohol series increases with the molecular weight (that is, with the increasing number of CH_3 radicles), until a point is reached at which the hydrocarbon becomes almost or quite soluble and hence inactive. However, there is a popular belief—among medical men as well as the laity—that methyl (wood) alcohol is more toxic than ethyl alcohol. This holds true in subacute poisoning only, i. e., after about twenty-four hours. Within six to twenty-four hours ethyl alcohol is roughly 10 per cent. more toxic than methyl. A partial explanation of the greater toxicity of methyl alcohol in subacute poisoning is as follows: Under ordinary conditions ethyl alcohol is rapidly and almost completely oxidized in the body; not more than 2 per cent. is excreted unchanged (by the lungs and kidneys). The case is quite otherwise with methyl alcohol, which is largely oxidized to formic acid. The acid is readily excreted by the urine but the excretion reaches its maximum only after four days, which means that methyl alcohol or some intermediate product remains in the body during a period of several days. Recently, Völtz and Dietrich have determined the excretion of methyl and ethyl alcohol administered to dogs. In twenty-four hours 15.3 per cent. of the introduced methyl alcohol (2.0 ccm. per kgm.) was recovered (mainly from the expired air, to a lesser extent from the urine); in forty-eight hours there was a total excretion of but 24.3 per cent., while 36.8 per cent. was recovered from the cadaver, leaving but 39 per cent. oxidized in the body. With equal quantities of ethyl alcohol (2.0 ccm. per kgm.), within ten to fifteen hours 2 to 4 per cent. was recovered from the expired air and 0.4 to 3.8 per cent. from the urine; from two cadavers 25 per cent. was recovered ten hours after administration; from four cadavers but 3 to 12 per cent. fifteen hours after administration. Thus practically the entire quantity of introduced ethyl alcohol was either oxidized or excreted within twenty hours.—Cleveland Med. Jour.

HELIOTHERAPY.—Poncet and Leriche give an account of the results of treatment by insolation of nearly 300 cases of the various forms of local tuberculosis. They first practiced heliotherapy in cases of "white swelling" of the knee, coxalgia of tuberculous origin, and the success obtained led them to extend this method of treatment. According to the authors, heliotherapy is available in every country, and some of their most successful results were obtained in quite unlikely situations. They found that the intensity of solar radiation increased notably with the height of the sun from the horizon, and was aided by the purity of the air. Snow also considerably reinforces the active power of light. Heliotherapy by the sea and at an altitude was each in its own way equally beneficial. The drier air of the hills, the intense insolation among the snows was found to be particularly beneficial in osseous tuberculosis with existing fistulae. So, too, in the case of visceral active tuberculous lesions, in which sea air ought to be interdicted. Adenopathies, scrofula, rickets, and the osteo-articular deformities of childhood are, on the contrary, more benefited by heliotherapy by the sea. Serious accidents may occur if care is not taken at the commencement of treatment. There is in any case very frequently lassitude, headache, loss of appetite, and febrile reaction. The authors recommend a sèance of ten minutes to begin, the body being naked and the head and neck protected by an umbrella or large hat. This is to be continued for four or five days. Then fifteen minutes are given night and morning. This to be progressively increased up to three hours night and morning. Revillet has noted that where pigmentation was most rapid, recovery was quickest; whereas the prognosis is not so good when the skin does not burn. This rule has been proved to be by no means absolute, however. The authors confess that renal tuberculosis is not successfully treated in this way as a rule, and agree that in such cases early nephrectomy is the only satisfactory treatment. On the other hand, they have had very good results in vesical and prostatic tubercle. The most brilliant results have been obtained in tuberculosis of the peritoneum; but if in these cases there are adhesions and abundant fluid, they recommend laparotomy as giving more rapid results than insolation alone. Cases of tuberculous adenitis present certain peculiarities. They resist simple heliotherapy, but respond to a combination of this with sea air and sea-water baths. In tuberculous osteo-arthritis heliotherapy, in the authors' experience, has greatly minimized the necessity for resection or amputation. The exception is osteo-arthritis accompanied by intra-articular cold suppuration, which is particularly resistant. Resection of the knee is a comparatively rare occurrence. Immobilization with insolation cures the greater number of cases of white swelling. If in the case of the extremities there is much pain and a faulty position of the limb, the authors employ continuous extension. Many cases, especially in the young, are cured in two or three years without apparatus of any kind. When operative measures have to be undertaken heliotherapy is a valuable post-operative procedure. In osseous tuberculosis, such as Pott's disease, insolation is invaluable, and even in the fungous type of osteitis the treatment rapidly modifies the lesions for the better. Franzoni, indeed, has recently published photographs showing the different stages of the spontaneous expulsion of a sequestrum under the influence of heliotherapy. The authors' conclusion is that the method of treatment ought to occupy an honored place in modern therapeutics.—Brit. Med. Jour.

SOLAR ADVICE.—He possessed a picturesque word sense who invented the term "sunstroke." One sees the volt leap from the blue, the victim topple to earth with a dull and appropriate thud, and feels, in the very sound of the syllables, a Homeric fatalism. Lightning itself, one might suppose, is not a more blindly ruthless slayer than the day star. Yet quite the reverse is true. The sun is, indeed, a strict respecter of persons. Not from him need the wise and careful anticipate any lethal blow. He strikes down only the careless and misguided. Many and various are the rules set forth every year for the heated term, but they all simmer down to this: keep a cool control of your nerves, a firm grip on your habits, and a loose collar about your neck. *"Du calme, du calme,"* advises the queer little doctor who sent Joseph Conrad's hero off into the superheated "Heart of Darkness." "Avoid irritation more than exposure to the sun." For the city dweller who lives in close and somewhat irritant contact with his fellow men, this is particularly sound hot-weather counsel. Frazzled

nerves are often the beginning of collapse. Keep away from alcohol. You can't put out flames by throwing coal at them, nor can you reduce bodily heat by pouring liquid fire into yourself. Dress comfortably, and let appearances go. You can be lovely next winter—if you insist. Summer is the logical time of green things. Eat them—salads, fruits, uncooked vegetables. Go light on meats and sweets. Drink plenty of water, but not too cold. Stinting oneself in this respect is a mild form of torture which the nerves resent. To be sure, water drinking induces perspiration, and perspiration is unromantic. But it is safe. The man whose pores are kept open is seldom a victim of heat prostration. If you find yourself to have stopped perspiring suddenly and without apparent reason, get your doctor at once. That is the danger signal. Above all, keep your digestion and your sleep sound and regular. One more bit of advice in the interests of comfort, and this lesson is over. For him whose heart, lungs, and circulation are normal, lying perfectly quiet in a tub of cold water until slightly chilled, and then drying off *slowly* and without towel friction, is a safe measure, the cooling effect of which will endure for hours even in the most severe heat. Finally, cut this out, paste it in your hat (the lightest procurable), fear no more the heat 'o the sun, don't worry, but go on your way secure against the slings and arrows of outrageous temperatures.—Collier's.

The Significance of Chyliform Effusion.—Relatively very little attention has been paid to the pathology of the thoracic duct and of its tributaries. One reason for this is that the thoracic duct, owing to its out-of-the-way location, is rarely examined at autopsy. Moreover, symptoms pointing to disease of the chylous lymphatics and of the main lymphatic trunks of the body are exceedingly rare. Suppuration in the thoracic duct was described several years ago, apparently for the first time, by De Forest of New York. The most common manifestation of disturbance in the chylous lymphatic system is chylous ascites of which sixty-eight cases have been collected by Batty Shaw. This condition is one that may be produced by any of a large number of causes, which usually brings about an obstruction or occlusion of the receptaculum chyli or of the thoracic duct at any part of its course in the abdomen or thorax. The obstruction may be of inflammatory or neoplastic nature. The two most important causes are tuberculosis and cancer. These are illustrated in the two cases reported by H. A. Lediard in the British Journal of Children's Diseases.

One of these cases was that of an 18-year-old boy who came under treatment for what was apparently tuberculous peritonitis. The abdomen was greatly distended, and diarrhea was a prominent symptom. Six pints of a chylous fluid were removed on tapping the abdomen. Death occurred three weeks later. A careful autopsy was performed. Evidences of tuberculosis were found in many parts of the body. The receptaculum chyli was obliterated in a mass of glands and fibrous tissue, and the different lymphatics were markedly distended. These were the main features in the pathology of the case, in which transudation provided the mechanism by which the chyliform ascites was produced. One peculiarity was that the shape of the abdomen seemed to show that the fluid was collected more in the upper half, and it is sug-

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gested that this peculiarity may be of diagnostic service in a similar case.

The second example of chyliform ascites was presented in a girl aged 18 years, suffering from Hodgkin's disease. She had undergone two operations for the removal of masses of glands on the left side of the neck and in the left axilla. There were symptoms pointing to peritonitis and to the presence of fluid in the abdomen. Tapping demonstrated a chylous ascites. Although no autopsy was obtained in this case, it is suggested that pressure by an enlarged gland on the thoracic duct at its termination caused a transudation of chyle within the abdomen. Of the 68 cases of chyliform ascites collected by Batty Shaw, 18 were due to compression of the thoracic duct.

The question of the relative frequency of tuberculosis or of malignant disease in the production of chylous effusions is answered by Lediard in a discussion of the above interesting cases. Rotman collected 20 cases, of which only two were attributed to tuberculosis. Of 9 cases of milky effusions in the thorax only 1 was associated with tuberculosis. It is pointed out that the relative frequency of cancer and tuberculosis as causes of chylous effusions is as three to one. Chemical and microscopical examination of the milky fluid may furnish some clue as to its origin. If pure chyle, it probably comes from a leak. But such an occurrence is exceedingly rare. A transuded fluid shows chyle mixed with lymph. The presence in the fluid of different kinds of cells, as blood corpuscles, lymphoid cells, full of fat granules, or epithelia cells with fat granules may indicate the presence of cancer within the abdomen. Rupture of the receptaculum chyli rarely occurs. The treatment of chyliform ascites is a surgical problem, but one which at present offers little of promise.—Med. Record.

Anecdotes.—Of Pierre Chirac, Councillor of State, First Physician to King Louis XV of France, etc., almost as many stories are told as of Sydney Smith. In the correspondence of the Duchess of Orleans, under the date October 20, 1719, it is stated that the physician was summoned to the bedside of a lady who was ill. While he was in the antechamber news came that the shares in Law's Bank had gone down. The doctor, who held a number of these shares, was much perturbed by the news, and when he sat down by the patient to feel her pulse he muttered, "My God! It is going down, down, down!" Hearing this the patient screamed, and when the members of her household ran to her she cried out, "I am about to die; M. Chirac has said three times, while feeling my pulse, 'It is going down.'" Recovering his presence of mind the doctor said, "You are dreaming; your pulse beats all right, and you are quite well. I was thinking of my shares in the Mississippi on which I must lose, as they are going down." The lady followed Dame Quickly's advice to Falstaff, and troubled herself no more with thoughts of death. In the Journal of Elizabeth Lady Holland (1791-1811), edited by the Earl of Ilchester, it is said that Dumont mentioned a curious anecdote of Chirac which he had from Condorcet. At the age of 84 he was attacked by an illness, which proved to be his last. For two days he lay in a state of insensibility; then he suddenly jumped up, and sat upright in his bed, felt the pulse of his left hand with his right, shook his head, and in a loud voice cried, "They have called me too late; the patient is dying." He immediately fell back and expired, thus verifying his own prediction. He died at Marly in 1732. Lady Holland goes on to say that Chirac was once aroused in the night to attend a dying Cardinal, a person of very profligate life and infamous character. To hasten the physician, the messenger said, "Venez donc, il souffre comme un damné." He replied, "Comment, déjà?" In the Memoirs of Bachaumont, under the date of July 21, 1777, a similar story is told of Bouvart. Being called to the Grand Almoner, he found him suffering from the gout, which, he said, made him feel as if he were in Hell. "What, already?" said the comforting physician. The same story is sometimes told of Talleyrand.—Brit. Med. Jour.

The Sleeping Sickness in Uganda.—Since the disastrous results of the use of atoxyl in this affection the question of substitute procedures, old or new, becomes of much interest. Schilling gives the results of his recent study on this subject. At Entrebbe there had been no deaths for 18 months. The inhabitants, intelligent people, have carried out all the prophylactic measures submitted to them. In other localities, however, much sleeping sickness still prevails despite the haste with which the populace is being removed from infected regions. All houses, boats, etc., in the latter are at once burned. Deforestation is practiced to a certain degree, although large trees are not molested. The river banks are sown with citronella grass, yet this is proving an obstruction to agriculture and is besides of questionable value. The papyrus plant which grows in damp, mashy soil is doubtless superior. The glossinae are not found where it grows. All "carriers" of sleeping sickness residues are sterilized when they are known by the ordinary medical treatment, but this is a resource of minor extent. A lady named Robertson has done excellent research work on the native apes and has found trypanosomes in the circulating blood. Much work remains to be done in this field. What trypanosomes are parasites and what flies are hosts is still undecided. Attempts are naturally being made in the direction of a specific serotherapy of the disease in man, but as yet without success.—Deutsche med. Woch., per Med. Record.

Suitable Employment for Epileptics. M. Woods of Philadelphia, calls attention to the frequent automobile and other accidents occasioned by the employment of epileptics. He recites a number of instances of such accidents from his case books in which not only the lives of the individuals themselves, but also the lives of others were jeopardized by sudden attacks of epilepsy in the afflicted person. As instances of the unwise employment of epileptics, he mentions the case of a painter who fell while working on a high scaffold, and a coachman with petit mal who on three occasions nearly caused the death of three different employers and their families, and in a fourth instance almost killed himself and his employer by an accident in which the carriage was smashed. In another instance a chauffeur was killed in an accident during an attack. He had previously never had anything but nocturnal attacks. Another person was caught in a belt in a machine shop and fatally injured. A barber in a sudden convulsion almost cut off the nose of a customer. In another instance an epileptic nurse, in a convulsion, fell down stairs with a child in her arms, which resulted in crippling the child for life. Other instances of unsuitable

occupations are those of stationary and locomotive engineer. The employment of epileptics in positions which require the most constant and alert attention such as those of chauffeur or engineer, or in occupations which subject them to the hazard of dangerous positions or proximity to machinery should of course never occur; yet it is necessary that these persons should be provided with suitable occupations. Dismissing epileptics into idleness is not a protective measure, for they may do more damage than when suitably employed. While not all epileptics are curable, it is recognized that occupational activities in safe places constitute an important factor in their treatment and care.

Origin of the Inorganic Chloride in Gastric Juice.—It is assumed that the inorganic chlorides, more generally known as acid salts, of the gastric juice following a test meal are derived from the meal itself or from the neutralization of the hydrochloric acid by bases in the food. Hence it is that the inorganic chloride is generally regarded as lacking any physiological properties or devoid of any pathological significance. This view, current in medical circles, is attacked by Singer. (Lancet, 1913, vol. ii, p. 1663.) Experimenting with the gastric juice obtained from the fasting stomach of a cat, he found the sodium chloride to be of a variable quantity, and that it is related neither to the amount of "physiologically active" hydrochloric acid nor to the peptic power. He believes that the sodium chloride of the filtered gastric juice is in large part the result of an osmotic process in the stomach. If this is so, and Singer's results seem to be conclusive, then changes in the stomach wall must be followed by more or less pronounced alterations in the amount of sodium chloride. One is justified no longer in regarding the inorganic chloride as meaningless from the clinical standpoint, and it is not unlikely that future work will attach a not inconsiderable significance to it.—Progressive Medicine.

Bed Bugs.—However plebian this title may sound, the prologue to the note sounds so like a fairy tale that it must commence with "once upon a time."

Well, once upon a time a well-known zoologist related a very sad story about a medical colleague who was suffering from many obscure and unusual symptoms which had baffled the keenness of his confréres properly to diagnose and treat. And so, it being fashionable at that time to call all medical obscurities, without local signs, "neurasthenia," the poor doctor was carefully labeled a neurasthenic and given judicious doses of suggestion and cold water. But the more neurasthenic he was pronounced the worse he became, and neither could he sleep nor could he eat, and he lost of flesh many pounds, and he became indeed mind-weary and restless. So one night when he was wading in the sloughs of despond he called by telephone upon his friend the zoologist, and requested him to come over to his domicile to console him and to prevent him ending his mortal existence. The zoologist upon learning the whereabouts of his friend's home immediately ordered a taxicab to hurry him to comfort his sorely vexed comrade. And lo! when he arrived there he found his friend sleepless in bed, haggard and weary from many nights of sleeplessness, not knowing what ailed him but complaining of a mighty discomfort. So that he might cheer up the surroundings of

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SAMPLES AND LITERATURE TO PHYSICIANS ON REQUEST

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the seemingly dying man he turned on all the electric lights in the apartment. Great indeed was his surprise at finding a colony or two of old friends squatting on the underside of the bed, and when he saw *simex lectularius*, wisdom came unto him as the Pillar of Smoke unto Moses of old. And with a mighty oath he swore that he of all men could cure his friend, and he gave him a bath and took him to his own home for the night. The next day the bed and its occupants were destroyed, the doctor took to new lodgings and lived happily ever after.

Fantastic as this story sounds, it nevertheless is true and was told to the writer by the zoologist who figures in it.

That bedbugs cause insomnia is by no means unknown; that they may cause insomnia to residents in brown stone mansions without actually revealing their existence is not surprising. But the rôle they may play in spreading infectious diseases is far more important. Recently Sergeois called attention to the experimental work proving the carriage of relapsing fever by bedbugs.

It has already been shown that not only may they carry typhoid bacilli but may infect a second patient. In tropical countries the bedbug has been shown to harbor some spirochætæ and to be an intermediary agent in the transmission of kala-azar, and possibly of plague and trypanosomiasis. Like its brothers in the spread of filth, the bedbug must be considered an enemy to hygiene, and with the fly, the mosquito, the tick must perish before the advance of preventive medicine. The United States cannot ignore the bedbug; typhoid fever is epidemic here, and, as time progresses more and more so-called tropical diseases are being discovered. We too, must be "heroes in the strife." The example we set in Cuba and Panama to our enemies *anopheles* and *stegomyia* should be followed with a similar urgent lesson to *cimex*.—Interstate Med. Jour.

Girls More Popular Than Boys.—From the annual report of the Children's Department of the State Charities Aid Association it appears that nature has conferred a great boon on the male portion of the race by making the determination of sex subject to a hidden biological law. Otherwise, apparently, the world would soon be an Adamless Eden. Girls are desired, when children are in contemplation, about three times as often as boys. Of the 4,754 applications from families desiring to become the foster parents of orphans, received by the Association in its fifteen years of activity in this field of preventive philanthropy, 3,011 wanted girls while only 1,478 were satisfied with males.

Nature's plan of deciding such questions must be unsatisfactory to a very large proportion of mortals because 190 applicants were willing to take either boys or girls and only thirty wanted both.

The State Charities Aid Association has been obliged to disappoint many foster parents because of the 1,784 children placed, 765 were boys and 1,019 were girls. Seven hundred and seventy-eight were babies between three weeks and two years of age, 690 were between two and ten and 316 were over ten.

All these children are either taken out of orphan asylums and placed in free homes or are placed in homes before being committed to asylums. Not only is public dependency prevented but the children themselves are benefited by the normal family life in which they grow up.

The committee placed in free family homes during the year 231 children and transferred, for various causes, 197 from one home to another. One hundred passed from the oversight of the Association.

The Association emphasizes not only that the character of all applicants is carefully investigated before children are placed with them but also that a careful supervision is maintained over all children placed.

The Children's Department is foster parent, by proxy, to 1,784 children. What becomes of them after being placed in family homes is indicated by the following table:

Legally adopted	628
Returned to relatives of good character who had become able to care for them	44
Returned to agencies or institutions from which the children were received	43
Died	49
Became of age and self-supporting	51
Transferred to and placed through other societies and institutions	10
Placed in institutions for special treatment	25
Married	6
Remaining under the oversight of the S. C.	928
Total	1,784

The Hon. Joseph H. Choate is president of the Association and Homer Folks is secretary. Miss Mary Vida Clark is assistant secretary and executive of the children's department. Miss Clark says that anyone can become a foster

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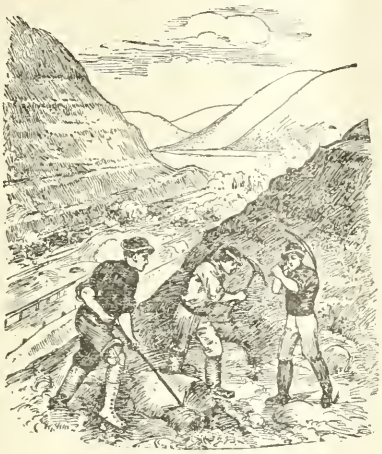

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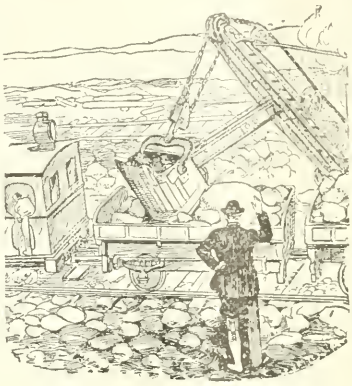

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parent, regardless of whether they can take a child into their home. The Association has worked out a plan whereby a person by contributing fifty dollars can pay for the placing of a child in a real home, and follow that child through its later development, by means of periodical reports from the agents who supervise it.

The Decayed Teeth of School Children are far more dangerous than we have formerly believed. Those pioneers who have been urging dental work in schools are not officious busybodies trying to create jobs but are public benefactors deserving of commendation. Parents, as a rule, are horribly negligent of their children's teeth, even intelligent ones are ignorant of oral hygiene. It would be a wise move then for the family doctor to look into the mouths of his little patients as a routine part of his examinations. He might find the cause of many an obscure case. It is a well known fact that a group of children whose teeth are kept in good condition, are far healthier, brighter, and better developed than an identical group in identical conditions but who are poisoned by discharges from carious teeth and diseased gums. It is thus proved that from infancy to old age we are in constant danger of developing fatal diseases as a result of toxemia from a very insignificant pus focus in the mouth. This is an enormous hygienic field for cultivation, and the family physician will be miraculously successful if he is on the constant lookout for these minor affections undermining health. If only half is true as to the statements relative to the development of tuberculosis in persons suffering from chronic poisoning, it would be well for our anti-tuberculosis societies to include oral hygiene as a part of their crusade.—American Medicine.

Restrained From Claiming That Its Product Is Identical With Ichthyol.—According to the "Chemist and Druggist" for December 27, 1913, the Ichthyol Company (Cordes, Hermanni & Co.), of Hamburg, has again been successful in court in demonstrating that still another article offered as a complete substitute for ichthyol is far from being identical with it. The Ichthyol Company's action was against the Chemical Factory of Westend Alwin Löwenthal, Charlottenburg. The Supreme Court in Berlin on September 26, 1912, ordered, under severe penalty, that the Löwenthal Company be restrained from publishing any statement to the effect that its product is a substitute of equal value for ichthyol, or that it agrees in all its chemical and physical properties with ichthyol, or that it can be designated as chemically equivalent, and therefore of equal value, or that it is identical with the original product, both chemically and physically.

The Löwenthal firm appealed against this decision and the Supreme Court of Judicature (Kammergericht), having heard the appeal, dismissed it. In the course of its judgment the Court stated that the incorrectness of the firm's statements had been proved. Thoms, Virchow, Aufrecht, Gilbert, and Frank (the last engaged on behalf of the accused firm), arrived at the conclusion that the total content of sulphur in the two preparations is different; further, that the content of sulphidic sulphur in the two products also differs, ichthyol exceeding that of the substitute in the proportion of eleven to two.

Golf-Ball Burns.—H. Lowell, of Boston, reports four recent cases of injury to the eyes of children from the liquid contained in golf-balls. Only one of the cases escaped permanent injury and practical loss of sight of one eye. There are apparently two makes of golf-balls each containing a different, highly caustic substance, which squirts out when they are perforated or burst. Analysis of one kind showed a content of a mixture of barium sulphate, soap and a free alkali. Another kind has been found to contain zinc chloride.—Jour. A. M. A.

The Bladder Ills of the Aged.—Certain bothersome bladder troubles of elderly people are often due quite as much to systemic debility as to local weakness. Lack of space prevents any extensive consideration of the subject, but if the whole body is debilitated the metabolism is sure to be deranged, the bowels become sluggish and an increased amount of abnormal or waste products find their way into the urine. These are more or less irritating and account not infrequently for the low grade form of cystitis that accompanies the "run down" state of the aged. In such cases, tonic medication is urgently indicated and the well known capacity of Gray's Glycerine Tonic Comp. for promoting functional activity and increasing bodily elimination gives it a special utility in the management of any bladder trouble in which metabolic depression or derangement is a factor.

Under its influence, the functional activity of the whole organism is promptly increased with the result that physiologic processes throughout the whole body are stimulated, the metabolism is regulated, and elimination increased.

The benefits from "Gray's," therefore, are both prompt and pronounced and through its use many cases of chronic cystitis that are due to or aggravated by general debility or malnutrition, are cleared up in short order.

In this connection it is no exaggeration to state, moreover, that few remedies are more serviceable in all conditions calling for tonic or upbuilding measures than Gray's Glycerine Tonic Comp.—(Purdue Frederick Co.)

Prevention of Great Wrongs in Prisons and Insane Asylums for Criminals.—Beverley Robinson, of New York, writes that the disgraceful public proceedings in the Thaw case prove in the clearest manner how necessary it is to have proper oversight of a state insane asylum for criminals. "To my mind," he writes, "this cannot be had in the best way through mere officials. We should also have, as visitors, men and women of character and experience, who have love of their fellow creatures, to see that no narrow-minded special view shall rule. No graft, no cruelty could then exist in the institution, without soon being discovered and punished. As it is, in institutions where the criminally insane, or insane criminals, are confined, it is very difficult to get the truth as to concealed facts, and to remedy abuses of power. Properly qualified and selected visitors must be willing to do their duty fearlessly and searchingly.

"It is all important, in my judgment, that one of them should be a physician of wide repute for qualities of head and heart, obtained through service to humanity. He should not be, or have been, a specialist, but an all around physician with a wide range of vision. The services of such an one would be invaluable. Neither he, nor the other visitors, should have any pecuniary reward. Politics should not be considered in making appointments, but simply the public welfare. It is a terrible thing to be in prison. It is infinitely worse, when the warden is neither capable nor honest. It is equally deplorable to have the superintendent of an insane asylum for criminals, or for those who become criminals through insanity, any man other than one of broad knowledge and absolute integrity. Men of such calibre would welcome, rather than oppose, counsel of other men of similar high purpose, even though not experts in their chosen field of work.

"Not infrequently, prisoners pronounced insane by experts, are shown later, to be of sound mind. Perjured evidence attributable to base or sordid motives, is the cause of many unjust convictions. As in insane asylums, so it is in prisons. I have

THE NERVOUS TRIALS OF WOMEN.
In the nervous disorders of women, and especially those due to functional disturbances of a character peculiar to the sex,
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known many men who have been sentenced for crimes they did not commit, but who were unable to prove their innocence because back of their efforts to obtain justice was their dire ignorance or poverty.

"Graft and perjury by others, may have been the dominant factors, which at first led to their arrest and imprisonment.

"How could these woeful injustices be prevented, or made fewer? Simply and solely by appointing good men and women, as responsible visitors to every penal institution. They should visit frequently and unheralded and soon, if duly accredited with power they would be able to effect great and enduring reforms.

"The Governor, or the New York State Prison Commission, could make the appointments and confer the power.

"If it were done, I venture to affirm, very soon we should have an end of such scandals and enormities lately told us from Matteawan and Sing Sing."—Med. Review of Reviews.

A New Catalog of Medical Books has just been issued by E. B. Treat & Company, medical publishers, New York. Here will be found listed many volumes of more than passing interest to the profession as this firm has always made it a special point to issue volumes of practical value and yet reasonable in price. Among their latest works may be mentioned:

"Diseases and Deformities of the Foot," by Dr. John Joseph Nutt.

"Diseases of the Rectum and Pelvic Colon," by Dr. Martin L. Bodkin.

"Surgical Diseases of Children," second edition, by Dr. Samuel W. Kelley.

If you have not already received your copy of this catalog a postal card will bring one. It is well worth having for reference.

Genito-Urinary Clinic.—Dr. Abr. L. Wolbarst will hold a Genito-Urinary Clinic on Thursday evenings at 8:30, from January to May, inclusive, at the West Side German Dispensary and Hospital (New York School of Clinical Medicine). These clinics will be free to physicians.

Typhoid Epidemic in New York.—The Central Council of Public Health of the City of New York in its report on the typhoid epidemic in Manhattan in 1913 makes the following recommendations:

1. That the department of health take more rigorous action in enforcing the law concerning the reporting of typhoid fever cases.

2. That the attention of the boards of managers of hospitals be called to the fact that hospitals frequently fail to report cases of typhoid fever and that an appeal be made to them for prompt and complete reporting of all such cases.

3. That the department of health require the hospitals to enter cases of typhoid fever in the special books provided by the department of health for the registration of cases of tuberculosis and venereal diseases.

4. That the department of health be urged to enforce rigorously its rules and regulations with respect to sterilization of milk cans and milk bottles.

5. That the health department's force of inspectors, both for typhoid and milk inspection, be increased and that the medical and sanitary corps of the department be made more flexible; and that in the case of milk supervision special attention be paid to the inspection of the milk at the receiving stations.

6. That the department of health be requested to institute supplementary visits in typhoid cases and to require from its inspectors reports on the continued observance of sanitary rules in the homes of the patients.

7. That the department of health exert its influence in the matter of early sending to hospitals those cases of typhoid fever in which the department's inspectors report inadequate sanitary care.

8. That the department of health consider the revision of its circulars of instruction with the view of making them still more helpful to the public.

9. That the county medical societies of this city be asked to stimulate interest among their members as to the importance and necessity of prompt reporting of typhoid fever cases and of adequate isolation and disinfection.

10. That greater use be made by physicians of the facilities of the Henry Street Settlement in securing adequate disinfection and proper isolation in cases of typhoid; and

11. That the attention of the public be called to the resolution adopted by the New York Academy of Medicine urging that all persons in an infected family and any person who has been exposed in any way to the disease follow up the sanitary precautions usually taken in such cases, subjecting themselves to immunization at the hands either of their private physician or of the department of health.

Throat Affections.—In all acute or chronic inflammations of the throat, pharyngitis, tonsilitis and laryngitis especially, Gray's Glycerine Tonic Comp. will be found of exceptional value. Used in appropriate dosage it allays congestion of the mucous membrane and underlying tissues, thus relieving pain and soreness, and by imparting tone to the local structures helps to restore normal conditions. "Gray's," moreover, is particularly useful as a prophylactic measure in those patients who are peculiarly subject to frequent colds. In such cases, its use from time to time tends to increase the resistance of the local mucous membrane and enable it to successfully combat germ attack. Public speakers and singers are also greatly benefitted by "Gray's" and if administered for several days before putting the throat or voice to unusual strain, it can be relied upon to increase the strength and vitality of the local structures.—(Purdue Frederick Co.)

The bad habit of trimming its corners is responsible for many cases of ingrowing toenail.—Amer. Jour. Surg.

The nine-year-old boy of a Baltimore family, who is compelled by his parents to practice daily upon the piano, may not be a clever performer, but he has a pretty shrewd notion of the worth of an instrument, as well as a rather mature wit, as is evidenced by an incident in the household not long since.

His father, upon returning home from a week's absence, heard the lad plugging away at the piano.

"When did you learn that new piece, son?" asked the parent.

"It isn't a new piece, dad," answered the boy. "The piano has been tuned."—Lippincott's.

Chicago Pharmacal Co., Chicago, Ill.

Gentlemen: I am enclosing my check herewith for $2.00 for which please send me by return mail 1 lb. Dermatone. This preparation is ideal in its action, and is altogether the finest thing of its kind I have ever used.

Yours truly,
S. T. Humphreys, M. D.,
Nocona, Texas.

The Element of Uncertainty.—In the treatment of disease the element of uncertainty with special reference to individual idiosyncrasy, must always be considered, but the element of uncertainty as to the therapeutic action of a remedy can be eliminated providing ordinary care is exercised in selecting drugs or remedies which are not inert and have proven their efficiency.

For over 45 years Hayden's Viburnum Compound has maintained its reputation as therapeutically efficient in the treatment of Dysmenorrhea, Menorrhagia, Post-partum Pains, Puerperal Convulsions and in pain resulting from spasmodic contraction.

It is a well-known anti-spasmodic and as it contains no narcotics nor habit forming drugs, no disagreeable after effects is the result of its administration.

Given in teaspoonful doses, administered in boiling water, it will not disappoint you, thus eliminating the element of uncertainty, and as it is not a secret remedy, but a carefullycompounded and ethical pharmaceutical, it will render most satisfactory results in those conditions wherein especially indicated.—(N. Y. Pharmaceutical Co., Bedford Springs, Bedford, Mass.)

Serobacterins or Sensitized Bacterial Vaccines.—Bacterin or vaccine therapy, carried out by the use of killed bacteria, has now been successfully applied to the prevention and treatment of many infectious diseases. Clinical experience has proven beyond question that these products produce a degree of immunity which enables the person treated to resist infection and which is of great value therapeutically. The length of time required before the immune condition is present and the local and general reactions which sometimes follow the first and occasionally subsequent doses are, however, factors calling for improvement.

To remedy the first of these defects, experiments wer made with mixtures of serum and killed bacteria, with the idea that by this means immediate passive immunity could be had, as well as a more permanent active immunity, but this procedure resulted in failure, as only a slight degree of passive immunity was secured and no active immunity whatever. Besredka attributed this failure to the excess of serum present in such mixtures, and for the preparation of his "sensitized vaccine" took advantage of the discovery of Ehrlich and Morgenroth that bacteria mixed with a serum containing specific antibodies unite permanently with such antibodies. After maceration in the immune serum for a sufficient time the sensitized bacteria are recovered by centrifugalization. The bacteria, with their antibodies attached, are then washed in the centrifuge with physiological saline solution until all traces of serum are removed. Careful complement fixation and animal tests are employed to make sure that proper sensitization has taken place, and finally the bacteria are made up into standardized suspensions for administration. Since the value of serobacterins depends on thorough sensitization, and the complement fixation test proves the extent to which this has taken place, this test constitutes a vital part of the technic.

Besredka claims that sensitized bacterial vaccines or "serobacterins" possess a great advantage over the bacterial vaccines now in common use, in that their action is far more rapid, and they produce no clinical or opsonic negative phase, and no local or general reactions. His researches have been confirmed by many prominent investigators, all of whom found that sensitization of bacteria confers upon them new properties which render them highly effective as vaccines, free from the defects of the ordinary bacterial vaccine and "possessing an action which is *certain, inoffensive, rapid* and *lasting*."

The underlying principle is that the bacteria prepared by sensitization are rapidly devoured by the phagocytes, and this is the cause of the absence of unfavorable reactions following their use. The combining of antibodies and bacteria outside the body disposes of a long-drawn-out preliminary process which, with the bacterial vaccines, must be done by the patient's body cells. In serobacterins, this combination of antibodies with the bacteria being already performed, their action is immediate and free from local and general reactions.

The action of serobacterins may be characterized as follows:

1. *Certain*—because the bacteria are already prepared for phagocytosis and intra-cellular digestion.

2. *Rapid*—an effective immunifying response follows the first injection in from 24 to 48 hours.

3. *Harmless*—Being saturated with antibodies, the serobacterins do not absorb any of those present in the blood of the patient, and consequently cause no opsonic or clinical negative phase. They are free from toxic action.

4. *Permanent*—Animal experiments prove that the immunity secured from the use of serobacterins or sensitized bacterial vaccines is more permanent than that following the use of bacterial vaccines.

The rapid production of active immunity marking the action of serobacterins is invaluable in both the treatment of disease and preventive immunization. In treatment of a patient infected with rapidly multiplying pathogenic bacteria, the prompt immunizing response should overcome the infection before it causes serious damage. In preventive immunization, especially in epidemics, the advantage of securing immediate immunity should make the use of serobacterins almost obligatory.

Sensitization is a delicate and complicated procedure which can be successfully carried out only in especially equipped laboratories by experts of the highest type. The difficulties surrounding the preparation of sensitized vaccines have up to the present time prohibited their general use, and the production of this superior vaccine on a scale that will make its use possible in every-day practice marks an important step in bacterial therapy.

A very complete review of this most interesting subject appears in The Mulford Digest for December, and we suggest that any physician who has not received a copy of the December Digest containing this review should secure one.—(H. K. Mulford Co.)

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EPILEPSY, ITS TREATMENT AND PROGNOSIS

By Henry C. Becker, M.D., of New York

IDIOPATHIC epilepsy is still the enigma it has always been and in its treatment but little progress has been made and this despite the loud and enthusiastic accounts in our medical journals of late anent a newer form of medication.

While an interne in a large general hospital in New York City, having a special ward for a large number of epileptic patients, the writer at that time took the same perfunctory interest in those patients as that displayed by the members of the visiting staff; this perhaps may be a reflection, it certainly is a confession of fault. Really, the only interest displayed in these unfortunates was by an over-zealous house man on the gynecological service bent on getting experience in laparatomies and ovariectomies on the female patients, the reason advanced was "justifiable sterilization." Subsequently, however, in private practice the writer's interest in those epileptics who came under his care was stimulated to a degree, certainly his observations became more acute and for obvious reasons; he tried to hold his patients and in order to do so he had to benefit them. This in turn led up to a serious study of the subject and a fair amount of reading on the matter of epilepsy. From this and from some years' experience in treating a considerable number of patients this article is compounded.

It is an essential rule to take cases early when possible and treat them vigorously for a long time after all fits have ceased. Treatment may cure or lessen the number or severity of attacks, although other factors have a decided influence, viz., heredity, surroundings, social position, exciting causes, etc. A cardinal principle is that the exciting cause of an attack in an individual is that circumstance to which the first fit was apparently due. After the *status epilepticus* has become fixed the instability of the brain causes the patient to react to other exciting factors.

During the fit no special treatment is required other than protecting the patient from injury. A spoon handle is placed between the jaws to prevent the tongue from being bitten and any other measures that may suggest themselves at the time and place of attack to prevent self-injury and harm.

The specific treatment of epilepsy is a sedative one. Heading the list of drugs employed and proving of greatest value are those containing the halogen bromine. The important ones are potassium, sodium, strontium and ammonium bromide; camphor monobrated, hydrobromic acid dilute, bromipin 10 per cent., and bromalin. Of the alkaline bromides the potassium salt is the strongest, most stable and reliable; it is, however, the most depressing and has the saltiest taste; the sodium salt is milder in effect and not so harsh on the gastric mucosa, likewise it is less depressing than the potassium salt; the ammonium bromide is slightly stimulating and most apt to produce acne; the strontium bromide has no special virtue. These drugs have been employed singly or in combination with each other or with other drugs. There is no special advantage in a mixed bromide; however,

when the stomach rebels to one salt it will often tolerate another when a change is made; the efficiency is also often increased by making a change. The saltiness of the alkaline bromides is a distressing feature to overcome; for this purpose fluid extract of licorice and the aromatic syrup of yerba santa are useful. The potassium bromide is given in doses of twenty or thirty grains three times daily well diluted in either plain water or vichy; the dose is then increased till the attacks are controlled; half to one ounce of the salt has thus been given in twenty-four hours. The average case of grand mal will respond very kindly to thirty grains three times daily. When the attacks have once been controlled the dose should be reduced but never entirely stopped for at least two years after the last seizure. It is a good plan when administering bromides for a long period of time to keep up the treatment for six days and discontinue it on the seventh, devoting that day to resting the stomach and treating it with sodium bicarbonate, tonics, etc. As the bromide treatment is so long maintained it is essential to procure when possible as pure a salt as is obtainable for most bromide salts contain impurities. The acne so apt to follow the administration of these salts is at times very annoying to the patients. For the prevention of this Fowler's solution in five or ten minim doses three times daily is useful, combining it in the same prescription with the bromides; washing the face with cold water and the application of a calamine lotion are to be recommended. Because of the bromism so apt to occur with the alkaline bromides the writer was led to try bromipin 10 per cent., which is a ten per cent solution of bromine in sesame oil. Given in teaspoonful doses three or four times a day it will control an average case and not give the symptoms of bromism. Bromalin in doses of thirty to sixty grains three times daily is also useful and for the same purpose. Dilute hydrobromic acid in doses of half to a teaspoonful well diluted three times daily is useful in those cases where the stomach has been upset by the alkaline bromides or when there is a phosphaturia with bladder irritability and alkalies are contraindicated. Camphor monobromated in five grain doses gives very good results in some cases. Children tolerate bromides very well indeed and in almost as large doses as adults. Children developing a few true seizures at four or five years of age should be treated as if they might develop the disease at ten or fifteen years of age.

Chloral hydrated is considered a specific-adjuvant, by adding five or six grains to the dose of bromide the latter may be reduced one-half and the convulsions still be under control.

Next in value to the bromides are the valerates, zinc valerate and validol; the former is given half to two grains in capsule form twenty to thirty minutes before meals; the validol in doses of ten to twenty drops on sugar three times daily.

Following the valerian preparations are such drugs as hyoscyamus, veronal and chloralamide. Hyoscyamus may be given in extract form in one to two grain doses; veronal in eight to ten grain doses in hot milk; chloralamide, forty-five grains per dose or ninety grains a day is very useful at times in certain cases.

In those cases of epilepsy coming on in persons past middle age it is frequently due to sclerotic changes in the blood vessels of the brain; the spygmomanometer may register a blood pressure far above the normal 140 m. m. of mercury; in such cases arterial dilators are necessary in conjunction with bromide treatment. Sodium nitrate in three grain doses is probably the best and most reliable dilator. It is given three or four times a day with proper observation of its effect on the pulse tension. It may be supplemented with ten or fifteen grain doses of potassium iodide; the sodium nitrite is not a very stable compound and care must be used in procuring a reliable preparation. Spirit of glonoin is too evanescent in its effect and likewise is a very unstable preparation and difficult to obtain in first class condition; the spygmomanometer is the only guide to its use and effect; the text-book dose being altogether too small; it should be given hypodermatically one-fiftieth of a grain every ten minutes till the tension in the arteries is lowered.

Crotalin Treatment.—This was employed in but four cases of genuine idiopathic epilepsy and too small a number perhaps for the writer to be in a position to judge of the worth of this remedial agent. However, in these four cases there was no change noticed after its prolonged use except in one case where apparently the initial dose was too large and the patient had more seizures than ever before. The preparation employed was that recommended by its chief advocate in this country and was the one employed by him. The dose was five minims of the solution given hypodermatically once in five or seven days and gradually increased to ten minims or until there was a local reaction indicated by redness and swelling over a greater or lesser extent near the site of injection in

the arm. The results of this treatment were exceedingly disappointing to the writer, the patients and the patients' families; so much concerning this "cure" had been printed in the medical and lay press that one hundred per cent. of failures came as quite a shock.

While not desirous of posing as an iconoclast after so limited an experience, the writer nevertheless is of the opinion that the value of crotalin has been greatly over estimated, probably through the zeal and enthusiasm of first observers. The writer ventures to state that were it possible to record the experiences of all practitioners who have employed crotalin in a fair number of cases the percentage of cures would not be as high as has been reported. All the patients who had been submitted to crotalin treatment were placed on the bromides and in every instance there was a lessening and in one case a complete cessation of the number of seizures.

Constitutional Treatment.—This is tonic, dietetic and hygienic. Of greatest service in the constitutional treatment of epilepsy is arsenic; as already mentioned it is employed in the prevention of acne; of far greater importance, however, are its hematinic and alterative actions. There is often a profound secondary anemia from the prolonged use of the bromides; to overcome this it is best administered hypodermatically in the form of the sodium cacodylate, two or three grains every second or third day; as an alterative and in conjunction with iodine and mercury it is helpful in hindering the sclerotic process in the brain cortex. In epilepsy there is a diffuse neuroglia, sclerosis, progressive in nature, which affects the cerebral cortex. Whether this process is primary or secondary there is reason to believe that these drugs have a prohibiting influence on this change. The iodine may be administered in the form of potassium iodide, but the writer prefers the syrup of hydriodic acid in one or two teaspoonful doses diluted and taken twenty to thirty minutes before meals to obviate a chemical incompatibility with starchy foods. The mercury may be administered in combination with arsenic in the shape of Donovan's solution in doses of from one to ten minims three times daily; likewise proto or biniodide can be given in tablet form.

Next in importance to arsenic as a tonic and hematinic ranks iron. For overcoming anemia it may be given in five grain doses of fresh Blaud's mass or in the shape of the soluble scale salts, in solution.

Phosphorus is useful and may be combined with Blaud's mass in the shape of zinc phosphide, one-thirtieth grain per dose. The glycerophosphates may be given in the form of an elixir and the hypophosphites in a syrup form. Quinine is too stimulating for use in epileptic cases except when there is a history of malaria. If there is a doubtful history of syphilis a Wassermann test should be performed before giving large specific doses of mercury and potassium iodide. In gouty and lithemic patients a stricter diet is to be enforced, a modified vegetarianism and alkaline salts and mineral waters prescribed. When there is loss of vaso-motor tone as indicated by a low blood-pressure on the spygmomanometer ergot is of very great service. It is administered in pill form of one to three grains of the aquaeous extract. Ergot may be considered almost in the light of a specific adjuvant in epilepsy. Care must be taken, however, not to prescribe too large a dose as it is apt to cause dizziness and light headedness from the cerebral anemia produced. Women tolerate larger doses than male patients.

Strychnine, of course, is contraindicated in epileptics using bromides because of its therapeutic incompatibility with the same; likewise when administering calomel it is well to bear in mind the possibility of its forming a poisonous salt when bromide is being employed.

Dietetic Treatment.—It is most important that the epileptic's diet be not over stimulating or one difficult of digestion; this is especially true in children. In children attacks may be brought on by an overloaded stomach or from eating indigestibles; in adults intestinal fermentations and subsequent auto intoxication are to be guarded against. On all counts meats must be used sparingly and once a day is sufficient. Well cooked fresh vegetables and fruits in season are to be recommended; milk, cheese, butter, olive oil, cream should be prominent in the dietary. For beverages cocoa, milk, water, a weakly drawn tea or coffee made from the decaffeinated bean are to be recommended. Alcoholic drinks and tobacco are best done without. Water, plain or mineral, is useful for its eliminative action and its use should be urged.

Hygienic measures, as bathing, salt rubs, Scotch douches, etc., are to be recommended. Warm baths are useful for the purposes of elimination and the cold showers and salt rubs for their invigorating action and help in keeping up the vascular tone.

Constipation is to be guarded against; dietary regulations, exercises and the judi-

cious use of phenolphthalein and cascara are all that are needed for this purpose.

Occupation is necessary for nearly all cases; there is nothing so bad as idleness for an epileptic, giving him time to develop bad habits or to ponder over his sad state. Outdoor work is best, such as farm work, gardening, etc. Carpentering, upholstery, etc., all occupy his time and attention. Of course the patient's aptitude and inclination should be consulted.

Exciting causes, as mental excitement, fright, shock and worry are to be guarded against. All reflex causes are to be sought after, particularly in children; they are to be corrected or removed when found. The commonest are those from the eye, stigmatism, squint, etc.; from the ears, abscess, chronic otitis media, mastoid involvement; nose and throat, adenoids and hypertrophied tonsils. Phimosis and worms should receive attention. Infectious diseases, scarlet fever, measles, malaria, diphtheria, typhoid and syphilis are sometimes exciting factors. Often fits in girls come on just before or after the menses; the dose of bromides should be increased at these times and any organic disorder corrected.

Surgical Treatment.—When the epilepsy follows a recent injury to the brain or its coverings or when due to tumor or cyst formation, surgery may afford relief; it certainly is justifiable in such instances. However, after the *status epilepticus* has become fixed and years have elapsed since a traumatism has been received, brain surgery is a very doubtful procedure. Frequently, however, there may be a temporary improvement in the patient's condition. Often, however, the end result is worse than the original trouble. The only case that came under the writer's observation where surgery apparently benefited the patient was in the case of a young colored lad who had been shot over the right eye with the bullet from a twenty-two calibred Flobert rifle. He had a discharging sinus and rarified bone could be felt with a probe. He was subject to fits of a grand mal type since the shooting. A conical opening through a genuine "bone-head" was made (the skull was about three-fourths of an inch thick and solid as ivory from inflammatory reaction) and the abscess cavity cleaned out. The bullet was hit by a probe and located deep in the frontal lobe; but it was deemed inadvisable to remove it. The wound drained well and finally granulated over. At the time of the patient's discharge (a month after operation) no recurrence of the fits had taken place. Subsequently he passed from under the writer's observation and whether the contracting scar or the retained bullet ever troubled him in the old way is not known.

Prognosis.—A complete recovery from true epilepsy is not usual; it takes place in but five to ten per cent. of the cases. The prognosis is poorest in the psychical forms and next in the hemiplegic; it is poor where coming on after middle life as the result of arterial change; while petit mal apparently is less dangerous to the patient the prognosis is not as good for a complete recovery as in grand mal. A certain number of patients reach a stage in their disease from which there is no progress. Recovery is more favorable in the young, especially when reflex, than in adults; it is said to be better in female than in male patients. Forty-five to fifty years represents a long life for an epileptic; treatment prolongs life through lessening the number of attacks. Patients who have but a moderate number of attacks—half to a dozen a year—can engage in useful pursuits and do good work; mentally they are as good as the normal person. In moderately severe cases there is a steady progression with mental deterioration, and about ten per cent. become demented. Epileptics are very susceptible to tubercular infection and many succumb from this cause.

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SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF GRANULAR KIDNEY*

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Dr. Purvis, in whose honor this oration was established, was a practitioner of wide experience, to whom the clinical side of medicine would most forcibly appeal, and in casting about for a subject I tried to select one which I thought would have met with his approval. Granular kidney seemed to me such a subject. It is a common disease, the interest of which is ever new, for it is constantly appearing in unexpected shapes, prepares for us many surprises, is by no means rarely overlooked, and presents many points of theoretical interest and of practical importance which may be worthy of our consideration. Although in the later stages the disease is past cure, still by an early diagnosis I believe much may be done to minimize its gravity, diminish its risks, and delay its progress.

Etiology. Granular kidney is an entity. It is a true disease, for it has definite morbid lesions, and definite clinical signs asso-

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ciated with them, which render diagnosis easy during life.

Shrunken kidneys were long known and described, but it was not until Gull and Sutton wrote that this affection was recognized as a disease. They drew attention to the changes in the blood-vessels and heart which were associated with the renal lesions, and gave the disease the name of "arterio-capillary fibrosis." Since then discussion has never ceased to rage as to the relation between the vascular and renal changes. The possible relation is threefold: (1) the renal changes may be primary, and lead to the vascular; (2) the vascular may be primary, and the renal secondary; or (3) both the renal and vascular changes may be joint results of some common cause. In spite of more than 40 years' discussion the problem is still unsettled.

Granular kidney is the best name for the disease, for it is the one generally accepted and best understood. Granular kidneys would be more accurate, for both kidneys are always affected and to a similar degree. The lesions are symmetrical and bilateral, never unilateral or local. This symmetry may be used as an argument in favor of some general cause to which the vascular and renal lesions alike are due, and there is the analogy of peripheral neuritis to support it. For peripheral neuritis, if bilateral, is always due to some general cause of a toxic character, like poisoning by alcohol or arsenic; whereas if it be unilateral, it is the result of some local cause. All local affections of the kidney, whether leading to shrinking or not, may be at once cut off, for there is not such a thing as granular kidney in which one kidney alone is affected.

Granular kidney is a form of chronic interstitial nephritis, yet all forms of chronic interstitial nephritis, even if bilateral, are not granular kidney. For instance, the gouty kidney, so-called, is a mixture of interstitial fibrosis with cell degeneration, yet gout has nothing essentially to do with granular kidney, for even in long-standing gout the kidneys need not be granular, nor is gout more than an accidental—i. e., not a necessary—accompaniment of granular kidney. * * *

Symptoms. Granular kidney is often overlooked because there are for a long time no symptoms at all, or if there are any they are misleading and point to almost any part of the body rather than to the kidneys. Yet so soon as granular kidney is thought of the diagnosis becomes clear, and all difficulty in interpreting the symptoms vanishes. It is generally the pulse that gives the clue, for so soon as the finger is placed upon the radial the characteristic thickening of the artery and the increased tension raise at once the question of granular kidney, and further examination soon makes the diagnosis certain. As compared with the thickening of the arterial wall and the increased tension in it the character of the pulse wave is unimportant.

The characteristic symptoms of granular kidney are: (1) the arterial thickening; (2) the increased arterial tension; (3) the characters of the urine; (4) the hypertrophy of the heart; and (5) the retinal changes. Upon each of these I have a few remarks to make.

Arterial Thickening.

Arterial sclerosis is a term which leads to much confusion, for as a general term it is a mere translation, and indicates nothing as to the nature of the thickening or its causes. But as a special term it is often used to denote that form of arterial thickening met with in granular kidney. The use of the same term in both a general and a special sense tends to confusion, and it would be well if the term could be eliminated from our terminology altogether.

Dr. F. W. Andrewes has recently published an important report upon the forms of arterial change as met with in the post-mortem room. The monograph is of special importance as showing how common such changes are, and how widespread and advanced they may be without giving any definite symptoms by which they can be recognized during life. Many of these lesions are not associated with appreciable thickening of the walls, and do not, therefore, concern us in our present consideration.

Those that are associated with thickening fall into two well-marked clinical groups.

1. The first is commonly called *atheromatous.* This is a patchy, nodular, irregular degeneration, widespread but not universal, affecting especially the aorta itself, the cerebral vessels, and some of the middle-sized vessels, such as the radial and temporal. This is the usual degeneration of advancing life, and has been called senile. Dr. Andrewes would subdivide this group into two forms, the senile and the nodular. The *senile,* in which the changes in the media are prominent, and some degree of calcification is the rule. The *nodular,* which commences in the intima, but

involves the media later, and ends in the characteristic lesions of atheroma; this may occur in earlier life. The two changes are generally combined as age advances, and so for clinical purposes may be considered together.

2. The second group is that following abnormally high blood presures, and is especially common in chronic renal disease. It affects the media especially, which is at first hypertrophied and then becomes fibrotic, but it is associated later with changes also in the intima. A good descriptive name is wanted for this, but it is often called arterio-sclerosis.

3. The third group is syphilitic, a local gummatous change involving primarily the intima, often multiple, but not generalized, affecting the aorta and cerebral vessels especially. This does not affect the radial or temporal artery, and therefore raises no difficulty in connection with granular kidney.

If, then, the artery at the wrist is thickened there are two chief changes to consider, the atheromatous and the renal. These may be distinguished by age. Thus in the early half of life atheroma is unlikely; while in the latter half though atheroma is common, the renal form cannot be excluded, for granular kidney may occur at any age, even in the very young and in the aged.

In the young adult there is one form which is not often referred to, yet it is of importance. I hardly ever lecture on arterial thickening without soon seeing some fine, healthy, athletic young student who has felt his arteries, found them abnormally palpable, and has jumped to the conclusion that he must have renal disease. In such a case the arterial thickening is not an arterial degeneration and a sign of disease, but a physiological hypertrophy and evidence of extremely vigorous life. Violent muscular effort leads to hypertrophy of the muscular coat of the arteries as it does of the heart. It is most marked in the most athletic and healthy, such as gymnasts or great oarsmen, and we may assume that they would not be capable of such sustained physical effort if this hypertrophy did not occur. I am glad to draw attention to this form of thickening, as it is not so generally recognized as it ought to be. On the other hand, it must be borne in mind that a similar degree of thickening in one who is not a great athlete would be pathological. This physiological hypertrophy disappears in the artery, as it does in the heart, when the call for it is over, and leaves no trace behind. I do not know of any instance to show that arterial degeneration can be fairly referred to it.

Are the arteries invariably thickened in granular kidney, and must they necessarily be? Perhaps not. I have seen a few cases, at any rate, in which the other signs made the diagnosis certain, and yet there was no thickening of the radial sufficiently obvious to attract attention, for the thickening was not more than was compatible with the normal for that age.

The thickening in the early stage of granular kidney is largely muscular, as can be shown by the effect of nitrite of amyl, which relaxes the muscular tissue, but has no action on fibrous tissue. The thickening felt in the radial can be seen with the ophthalmoscope in the retina, where the arteries show that wide and brilliant streak to which the graphic name "silver-wire arteries" has been given. Silver-wire arteries do not occur with any other form of arterial thickening except that associated with granual kidney, and are therefore pathognomonic.

Arterial Tension.—Arterial tension is the next subject for consideration. What we require to know is the tension or pressure in the arteries *between* the pulse beats. It is this pressure which converts the intermittent flow of blood into a constant stream, and upon which the nutrition of the tissues in large measure depends. We hear a great deal nowadays of blood pressures, but these are systolic pressures and measures of the force of the heart beat and pulse wave. The tension is not the systolic, but the diastolic pressure. The systolic and diastolic pressures are often confused together, yet they ought to be kept quite distinct from one another.

The character of the pulse wave depends upon the force of the contraction of the left ventricle and the amount of blood driven into the arteries, modified by the resistance of the arterial wall and of the capillary area.

The same systolic blood pressure might give very different pulse curves. The crest would be high and the wave short if the resistance were low, and the crest low and the wave long if the resistance were high, thus producing the low, flat, long wave of the sphygmographic tracing of the so-called renal pulse.

An illustration will make my meaning clear.

> A youth of 21 was suffering from advanced aortic incompetence. The systolic blood pressure was 180 mm. or more, yet the pulse was one of low tension owing to the defective nutrition and consequent loss of tone and the immediate collapse of the artery so soon as the wave had passed, owing to the regurgitation. Although the systolic blood pressure was high the diastolic tension was very low, and the patient was suffering more from low diastolic pressure than from the high systolic pressure, and to have reduced the systolic pressure by treatment would obviously have done harm.

There are many instruments which measure the systolic pressure, but none I know of which satisfactorily determines the diastolic pressure. In my opinion no instrument is yet invented which will take the place of the educated finger of the thoughtful physician.

The arterial tension in granular kidney varies. It ought to be above normal. It were better that the patient had not got granular kidney, but having granular kidney, he ought to have a raised tension. With a low tension the patient is not so well, and will not be better till the pressure rises again. There is a sort of average raised tension for granular kidney, which cannot, however, be well expressed in figures. The tension may rise above this or fall below it, and may then require appropriate treatment, but to attempt to reduce the average raised tension of granular kidney to the normal for health is a mistake and will do harm.

What is curious and not generally known is that the tension is subject to *fluctuations* of a peculiar kind, so that when the finger is on the pulse the tension is felt to rise and fall at short and irregular intervals. This is quite plain to the finger, but I have never yet succeeded, in spite of many attempts, in demonstrating it by sphygmographic tracings. I have only observed these fluctuations in the later stages of granular kidney when the patient was very ill, but they are by no means rare then.

Hyperpiesis.—Though high tension is a cardinal symptom of granular kidney, it is met with not infrequently without arterial thickening or any other evidence of granular kidney. This has been called *hyperpiesis,* and it deserves a special name, for it is a distinct clinical condition. It is met with in persons of great energy, who work and live at high tension and are not happy unless they do. They do two men's work and often two men's play as well. They live freely, yet without what can be called exactly excess. In fact, they enjoy life to the full.

The condition seems to be confined to the male sex. At any rate, I have not seen any case in a woman, even in those who lead strenuous lives. The blood pressure ranges round about 200 mm. Their life is one of high pressure; indeed, they probably could not live the life they do without a high blood pressure. High blood pressure for such persons is their normal condition, and it cannot be reduced with impunity. The most drastic measures may be employed till the health becomes seriously affected, but the blood pressure remains as high as ever. All that the treatment has done is to make the patients unhappy and incapable of their work. The drastic treatment is given up; they return to their ordinary mode of living, begin again to enjoy life, and soon are as hard at work as ever.

It can hardly be doubted that in the end such abnormal pressure will tell upon the vessels, and lead in time to some of those degenerative changes which Dr. Andrewes has described. Cardiac hypertrophy or failure may occur, or some vascular trouble develop, especially in the brain. These risks may be provided against in general ways, but not directly through the blood-pressure. The high blood pressure in their case is their normal condition, without which they would not be what they are—in popular parlance, they are built that way. Given the choice, they would rather have their high blood pressure with its risks and enjoy their life, than have their pressure lowered and lose their enjoyment of life.

Albuminuria.—Of albuminuria there is not much that I need say. The amount of albumin is usually small, sometimes merely a trace. The most important fact about it is that it may be absent at some time of the day or even be absent altogether for days or weeks. As a rule, however, it is persistent, and does not vary much in amount from day to day or at different times of the day.

Albuminuria is a symptom, and not a disease. It is of importance because it ought not to be, and is a sign of something wrong. Its significance varies especially with age. In schoolboys and young adults it is common, and is then often called physiological, but physiological it cannot be, though it need not be renal. In schoolboys it is met with in two types: (1) In one the schoolboys are well developed, muscular and active, and apparently in vigorous health;

and (2) in the other the boys are rather weedy, pale, or overgrown. In either case it is an affection of the age period and disappears as the boys grow up.

There is another class of the kind which has been called accidental albuminuria, and which is of importance. This is met with in athletes, university crews in training, football players, young recruits after drill—in fact, in young adults who are using their muscles violently. It disappears when the muscular effort is given up, and is not followed by any permanent mischief.

As long as albuminuria occurs as the only symptom in the young it is probably of no significance, but if it be associated with other signs, and especially with arterial thickening, even in slight degrees, more caution must be taken in pronouncing it to be of no gravity. For it may be the early state of granular kidney, for this is a disease which commences in early life and is not really rare in the quite young. Even when albuminuria is the single sign, its gravity increases with every year of age after 25, because of the increasing probability of its being due to granular kidney.

Even when a history of acute nephritis is obtained in earlier life, so that the albuminuria is in all probability due to some renal change it does not follow that the kidneys are involved to any great extent. For the acute nephritis may have resolved completely in one kidney and not in the other, or in both kidneys to a great extent—it may be of 9/10, 19/20 or 49/50. Yet the little patch of chronic mischief left will be quite sufficient to account for the amount of albumin present. In such cases the condition of the kidney must not be assumed on theoretical grounds, but must be determined by careful investigation. If there is no evidence of renal inadequacy the albuminuria may be of little importance, and life run its ordinary course to its usual span.

As the amount of albumin lost is so small, it is too little in itself to have any effect upon the health, and if the health suffer it is the result of other causes. The albuminuria need not, therefore, be drastically treated. Moreover, the strictest dieting often produces no effect upon it, though it may have a disastrous effect upon the health. Even if the albuminuria could be made to disappear, its disappearance would not show that the disease was cured, but a useful clinical indication would have been lost. As a matter of fact, treatment in these cases has little effect or none at all. As with raised arterial tension, so with albuminuria, treat it if need be, but beware of over-treatment.

Albuminuric Retinitis.—Of albuminuric or renal retinitis there are two forms—the one pathognomonic of granular kidney, the other not.

The one is *inflammatory,* and might continue to be called retinitis. It is associated with much swelling of the disc and retina, and might therefore be called *exsudative.* It is exactly the same as other forms of exsudative or inflammatory retinitis, and cannot be distinguished from them, and so it comes that mistakes in diagnosis have been made, for example, between granular kidney and cerebral tumour, especially when headache has been the prominent symptom.

The other form is *degenerative* and not inflammatory. It would be better to describe it as *renal retinal degeneration.* This is *sui generis,* and pathognomonic of granular kidney. I do not know of any retinal change like it, and when it is present granular kidney may be diagnosed with certainty.

The *acute exsudative form* is probably toxic in origin. It is met with in acute nephritis as well as in chronic. In acute nephritis it may resolve and completely disappear, leaving no defects of vision behind. In chronic nephritis it is more serious, and does not, as a rule, resolve because the renal condition has got beyond the stage of recovery.

There is no relation between the two forms, and it is not true to speak of the exsudative form as a later stage of the degenerative. They are distinct conditions, associated sometimes together, and due to different pathological conditions.

The *degenerative form* being pathognomonic of granular kidney deserves a little further consideration. It consists in the presence of small white glistening patches like crystals of cholesterin or the scales of a fish. These patches may be very tiny and require very careful searching for, but when found they are conclusive. They are patches of retinal degeneration and atrophy. In the most marked form they constitute the cart-wheel or spoke-like radiations round the yellow spot, but, of course, this is only an advanced condition. The spots are more interesting and important when they are few and tiny, for they may be accompanied by no defects of vision and be discovered only by routine ophthalmoscopic examination. They may be associated with hemorrhages, but these present nothing characteristic.

The spots being patches of degeneration rarely, if ever, disappear. I used to say never, and practically this is really true; but if the renal condition improve they possibly may, and I think I have had one or two such cases under my own observation. What is very important is that they may be present and characteristic when the other signs of granular kidney may be open to question, so that they are of the greatest diagnostic importance.

Renal retinal degeneration is a late symptom or a sign of advanced disease. It used to be said that it meant that the patient had not more than two years to live. That is in a general way true when the degeneration is well marked, but it is not possible to say how long it had existed before it was looked for. I have seen the tiny spots long before any grave general symptoms appeared, and I have met with cases of advanced degeneration with much hemorrhage which lasted to my knowledge five years and seven years respectively.

Treatment.—I cannot, at the end of such a paper as this, go into the details of ordinary treatment, nor is it necessary when addressing an audience of practitioners. I will merely refer to a few points upon which an expression of opinion may be useful.

Of the causes of granular kidney we really know nothing. Many conditions to which it has been attributed—e.g., gout, lead, syphilis, and alcohol—though they may be contributory or aggravating, are certainly not prime causes. The disease is of such long duration and its commencement may be traced so far back in life that its beginnings elude our study. It is a very common disease now, but whether this means that it is increasing in frequency or only that it is more often diagnosed cannot be determined. One is tempted to believe that it is really on the increase, and to connect it with the strain and stress of modern life, for it is often met with in persons with a perfectly clean bill of health who have simply lived strenuous and anxious lives.

Granular kidney *in the early stage,* though capable of certain diagnosis, leads to no symptoms. The general health seems so good as to justify the patients in disbelieving the diagnosis and disregarding to their own detriment the advice based on it. At this stage treatment is precautionary and directed to obviate the risks to which the disease leads, of which the chief are cardiac failure, rupture of vessels, and nephritis; therefore, physical strain, exposure, and habits of excess, especially in diet and drink, should be avoided. The life led should be of studied moderation in all things, of such a sort as would tend to keep the physical health at the highest level.

The risk at this stage is that the albuminuria which has been discovered should lead to its drastic treatment. The amount of albumin lost daily is too small to have of itself any effect upon the general health. Treatment has little or no effect in materially reducing its amount, still less in causing its disappearance, and drastic treatment by diet will injure the general health. Treat if need be, but do not overtreat.

There is another risk by no means negligible—viz., that of alarming the patient so much as to convert him into a renal hypochondriac whereby there is added to the renal disease, which is bad enough in itself, a neurotic condition of no slight gravity. To dwell too much upon the gravity of the case in the early stages to the patient is therefore undesirable, and, considering the long lease of life these early cases have, not warranted by facts.

When symptoms arise they must be treated on general principles, bearing in mind especially the nature of the disease which underlies them. Thus if cardiac symptoms develop over-stimulation must be avoided because of the increased blood pressure this would cause. For this reason digitalis is of doubtful value, and caffeine is a better remedy.

Vascular tension ought to be somewhat raised in granular kidney, and cannot be reduced much without detriment unless it be excessive. On the other hand, if the tension be low it must be raised, for with a low tension the patient is not so well, and will not be better until the tension has risen again. It is the tension that determines the use of digitalis. If the tension be raised it will do harm, but if low, and especially if associated with cardiac failure, digitalis is the best drug for the purpose. So soon, however, as the desired effect has been produced it should be suspended.

Hemorrhage may not be serious except when it affects the brain. Fortunately, cerebral hemorrhage rarely develops without some warning, and if the warning be taken may be avoided. These warnings are often given by hemorrhages elsewhere —e.g., into the conjunctiva or retina.

Epistaxis is common and may actually be useful, in so far as it may stave off a hemorrhage into the brain. Epistaxis may

be the first thing to bring the patient to the medical man. It may produce extreme exhaustion from which the health may never recover, so that the disease appears as if it dated from the epistaxis.

Hematuria is not uncommon and may lead to errors of diagnosis and treatment. Thus stone in the bladder may be wrongly diagnosed and operated for, or, if the hematuria be associated with cachexia, may raise the suspicion of malignant disease. As a rule, the hematuria is small in amount and does not require active treatment.

Generalised rashes are not uncommon in the later stages. They are generally more or less acute, toxic in origin, and of very grave prognosis. Acute general eruptions of any kind, if associated with albuminuria, are always serious, and if occurring in the course of granular kidney generally mark the beginning of the end.

For *sleeplessness* and *nervous restlessness* at night no sedative is better than cannabis indica, which in my experience is the great hypnotic in granular kidney. Opium and its preparations may be given if required without the risks once attributed to them.

Uremia is often ushered in by headache, great restlessness, foul tongue with gastric and intestinal disturbances. I do not propose to enter into the question of the treatment of uremia, except to say that it may often be staved off by active treatment if its imminence be recognized in time. For this purpose free purgation, active diaphoresis, and oxygen inhalation are of great use.

Of drugs there is none so good as pilocarpine, which, in my experience, is the great standby in granular kidney. It has been asserted that it is a risky drug to employ. That is not my experience. I have used it largely for years with great benefit, and I have never seen any untoward effect produced by it.

Chronic Uremia.—The symptoms which develop in the later stages of granular kidney are of a very miscellaneous character. They are accompanied by great impairment of the general health, and the asthenia and cachexia which result are often the most prominent features. This condition is often called chronic uremia, but it is so different from acute uremia that it is confusing to use the same name for both. *Chronic renal toxemia* would be a better term.

Similar symptoms arise in chronic parenchymatous nephritis. They may rapidly develop in cases of suppression of urine; experimentally in animals where both ureters have been tied or both kidneys removed, or in man where both ureters have been accidentally ligatured, or one kidney has been removed, the other being absent or grossly diseased, as well as in some extreme cases of acute nephritis. A profound and rapidly progressive asthenia thus develops, generally without any fits or ordinary signs of acute uremia; and of this the patient dies in about ten days or so without other obvious reasons except the asthenia.

Usually this condition is referred to poisoning by some substance which the kidneys ought normally to get rid of, but cannot. What the substance, or substances, may be no one knows, except that it certainly is not urea, as the name implies. There is, however, another alternative—viz., that the nutrition of the body suffers so profoundly for the want of some substance normally prepared by the kidney for use in the body—in other words, for the want of some internal secretion.

Renal Extract.—Has the kidney such an internal secretion? So far the pathologists have not been able to prove this experimentally. With their failure we must fall back on clinical evidence, in the hope that this may show that chronic renal disease is favorable influenced by renal extract, just as myxedema was proved to be by thyroid extract.

There is a difficulty unfortunately in preparing a reliable renal extract. I have tried various methods, and for a time used a glycerine extract. Messrs. Burroghs and Wellcome also attacked the problem, but without success, for they could get no preparation which was stable and could be preserved. I have consequently fallen back on an extract of kidney freshly prepared as required, using by preference the kidney of the pig as being a mixed feeder, rather than the kidney of a vegetable feeder like the sheep.

The great difficulty in obtaining evidence in favor of the usefulness of kidney extract in chronic renal disease lies in the fact that its use must be continued for weeks or months before results can be expected; generally patience is exhausted before the time required, and the treatment given up because signs of improvement are not immediate. Of course, in granular kidney the cases come under observation so late in the disease, when the mischief is so far advanced, that much benefit can hardly be looked for. Yet I have seen some of the symptoms, especially headaches, relieved by this means when they had resisted other treatment. * * *

My experience of some years now justifies me, I consider, in continuing and advocating the use of renal extract, but to be effectual in granular kidney it must be patiently and continuously persevered with for a long time.

THE MODERN TREATMENT OF CHRONIC NEPHRITIS*

A SUMMARY

By Rollin Hills, M.D., of New York

Although the pathologists describe an almost countless number of varieties of chronically diseased kidneys, the simplest and most practicable classification for the therapeutist is a division into the chronic parenchymatous and the chronic interstitial types. We must remember that the process is never limited entirely to the parenchyma or entirely to the interstitial tissue; that is, there is always a combination of the two processes (epithelial degeneration and increase of connective tissue); thus all cases of chronic nephritis are really cases of *diffuse* nephritis. Nevertheless, the predominance of one or the other factor in the process gives rise to certain more or less well defined differences in symptoms and physical signs, and calls for certain differences in treatment.

Chronic parenchymatous nephritis.—The first indication in chronic nephritis of either variety is relative rest for the patient and for the diseased kidneys. This does not mean that the patient must be kept in bed for the rest of his life, but it means that overexertion (mental or physical) and violent exercise must be prohibited. Unless the edema is pronounced or the heart very weak, these patients usually do better if allowed to take moderate outdoor exercise; they gain in appetite and digestion and in the condition of their blood. Exposure to cold and damp is to be avoided, and woolen clothes of suitable thickness should be worn next the skin all the year round.

The question of diet is perplexing. Few nowadays would advocate an exclusive milk diet, with the consequent loss of appetite, nausea, diarrhea, anemia, and loss of strength. Sufficient milk cannot be taken to keep up the strength for a prolonged period. However, milk should be one of the main articles of the diet; if practicable, one quart should be taken daily.

Meat is prohibited by some; others allow light meat, but not dark. The tendency at present is to allow a small amount of meat once a day, making no distinction between dark meat and light meat. As an individual needs eighty to ninety grams of proteid in twenty-four hours, and as this would require over two quarts of milk, or fifteen eggs, or twelve ounces of meat, it is best to take this amount in a mixed diet. By allowing a small amount of meat once a day, an occasional egg, and a quart of milk, the proteid equilibrium is maintained. Whether meat is allowed or not, will depend on whether it can be digested rather than on the state of the urine.

The patient should partake sparingly of soups rich in meat extractives. According to Ortner, game must be interdicted, as the amount of ptomaines and of extractives in the muscles of animals is increased by hunting.

Fish is allowed with almost universal approval, but here again Ortner believes that salt water fish must not be eaten by a nephritic unless the fish is obtained very fresh, before various toxins, such as neuridine, guanine, and hydrocollidine, have had time to develop.

Cereals are allowed freely, including rice, farina, tapioca, barley, etc. With these and with bread, vegetables, and fruit, sufficient carbohydrate is furnished. Asparagus has been looked upon by some as irritating to the kidneys, though most authorities at present allow it in nephritis. Ortner, however, excludes it along with onions, garlic, radishes, and celery, on account of the sharp oils that all these vegetables contain. He forbids tomatoes by reason of their oxalic acid. This leaves peas, beans, lentils, potatoes, cauliflower, turnips, carrots, lettuce, and the "near vegetable" macaroni. This list is still further reduced by those who look askance at the high proteid content of peas, beans, and lentils. Fat is given in the form of butter, cream, oil, etc.

Finally, it remains to be said that a nephritic patient should be cautioned against eating fried and greasy food, sweets in excess (cake, pastry, pies, candy, and sweet dessert), rich or highly seasoned food, condiments, hot relishes, hot sauces, pepper, mustard, cress, and rich or strong cheese.

Alcohol is an irritant to the kidney and should be forbidden, except in the form of light wines with meals in those who are accustomed to its use.

Moderate smoking can be allowed, as well as one cup of coffee in the morning.

In chronic parenchymatous nephritis, water should not be taken to excess, particularly when edema is present. This is a disputed point, and there are still those who believe that the nephritic toxins in the

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blood can be washed out by drinking lots of water. But it must be remembered that the diseased kidney has often lost its power of excreting large amounts of water, so that when the urine is scanty and the edema is stationary or increasing, an increased intake of water is followed by an increase in the edema instead of by polyuria. When the urine is acutally on the increase and the edema is disappearing, the time comes for drinking a larger amount of water, and such a procedure is then commonly followed by a still further increase in urine. In general the patient's thirst is a good guide; one and a half to two quarts is a fair daily allowance when no edema is present.

Climate.—A warm, dry climate, where the patient can spend much time outdoors, is indicated for both forms of chronic nephritis. Those who can afford to do so should spend their winters in Florida, Texas, or California, and their summers in the mountains of New England, New York, or Canada.

TREATMENT OF SPECIAL SYMPTOMS.

Anemia.—Fresh air in abundance and good food are the best tonics. Iron is the favorite drug. Some prefer the tincture of the chloride, which was formerly given in large doses (thirty to forty drops, t. i. d.). Such doses are much too large. Indeed, Tyson's dictum that iron "locks up secretions, causes headache, and increases the danger of uremia," is now given respectful attention by the profession. Basham's mixture has long been the routine prescription in nephritis, perhaps too blindly; it is something of a diuretic. The various preparations of iron, quinine, and strychnine have been of much service as tonics in nephritis.

Edema.—This brings up a subject of great importance. In order to rid the body of the fluid which is deposited in every available place, we attempt to make the kidneys, the bowels, and the skin perform their eliminative functions even beyond their usual capacity. When the edema seems to be partly dependent on cardiac weakness, we also feel obliged to stimulate the heart; so that our anxiety is apt to lead us to load up our patient with numerous drugs which tend to upset his digestion and to defeat our ends. It is probable that we can do less with the kidneys at this time than at any other; they have already given out, and they fail to respond as quickly and as surely as we would wish. Among our best diuretics are the citrate and the acetate of potassium, liquor ammoniæ acetatis, digitalis, and strophanthus. One of these drugs or all in turn may increase the urine markedly. High hot rectal irrigations are also useful at times.

For aiding the elimination of water from the bowels, the saline preparations have been found the most useful; whichever is decided upon should be given on an empty stomach in sufficient dose to cause two or three loose, watery stools a day. Elaterin is effectual in causing movements, but it is apt to be depressing.

The skin is capable of doing more in the way of elmination than we usually realize. When properly stimulated, a litre of water (one quart) can be made to pass through the skin in twenty-four hours. This water, according to H. Strauss, contains as much as six grams of salt and a gram of nitrogenous matter in the litre. Camerer found that 100 grams of sweat contained ten grams of nitrogenous matter, of which twenty-five per cent. was urea and seventy-five per cent. ammonia. In order to cause the skin to act freely, various methods of applying heat to the body have been tried with success. The simplest is a hot bath (105° F.) followed by covering the patient with blankets; next comes the hot pack. A Turkish bath with rest afterward and care about going out into the air too soon, also works well. A quarter of a grain of pilocarpine hydrochloride hypodermically will usually cause profuse sweating. In this and in all methods of producing sweating, the pulse should be noted carefully and syanosis should be watched for. Massage aids in getting rid of edema by equalizing the circulation.

Finally, the fluid can be removed when necessary by aspiration of the body cavities and by puncture of the skin under aseptic precautions. The fluid in the legs can be let out by making one cut two or three inches long in the skin on the shin or a cut behind each malleolus.

A saltfree diet has been used with some success for edema. The results, at times, are strikingly good. The diet must be as nearly free from salt as possible; none must be used in cooking, the bread must be made without salt, and the butter unsalted, of course. Milk must be left out of the dietary.

Another diet which has had some vogue in edema is the dry diet, in which fluid of all sorts is reduced to a minimum. It is a difficult diet for the patient, and the results are not good. A more successful formula is Tyson's milk diet of two ounces of milk every two hours. This is sufficient nour-

ishment for a few days, and it adds almost nothing to the amount of fluid in the blood.

The heart often requires stimulation, for which the indications are plain. Strychnine, digitalis, and strophanthus are the drugs most commonly employed. Cabot insists that free purgation with magnesium sulphate and the use of theobromine sodiosalicylate for five days should precede the administration of digitalis.

Hypnotics are often needed. The more useful drugs of this class are chloral, the bromides, veronal, and sulphonal. Sometimes morphine in small doses is the best hypnotic. Headache may be so severe as to require opiates.

Uremia.—The treatment of a supervening uremia opens too large a subject to come within the scope of this paper.

Chronic interstitial nephritis.—In considering this disease, only the points of difference between the treatment of the parenchymatous and the interstitial varieties will be considered.

The question of the amount of fluid to be allowed the patient has caused considerable discussion in this form of nephritis as in the other. It seems certain that large amounts (several quarts daily) throw extra and excessive work on the kidneys. The German plan is to have the patients take one day a week a large amount of water (two to four quarts) to flush out the system, and only a reasonable amount, guided by the thirst, on the other days. Von Noorden, Pel, Korányi, and others advise limiting the amount of water, holding that large amounts increase blood pressure. Strauss (*Berliner klinische Wochenschrift,* May 25, 1908), however, advises against too great reduction in fluids. He believes that a sufficient amount of water causes a dilution of the toxic substances in the blood and the elimination of these toxins, thus outweighing any supposed danger from increased blood pressure.

The dietary problems are so similar to those of the parenchymatous form that it is unnecessary to repeat them.

No particular mineral water can be recommended. The alkaline and chalybeate waters are to be preferred, as they act well by inducing catharsis and diuresis.

Heart and vessels.—It is now recognized that hypertrophy and hypertonia are compensatory conditions to a certain extent. But extreme hypertrophy and high tension cause headache and dizziness and lead to cerebral hemorrhage or cardiac dilatation.

The first step in lowering blood pressure should be to cut down the bulk of food, both solid and liquid. Houghton (*American Medicine,* October 7, 1905) has pointed out that treatment designed to lessen the amount of proteid putrefaction in the bowel will have a tendency to lower blood pressure by preventing the absorption of substances which, although rapidly eliminated by a normal kidney, accumulate in the blood by reason of the impaired kidneys. Removal of meat and eggs from the dietary is indicated.

Rest in bed is also a necessary move in the lowering of high tension. Next in order comes free catharsis, for example, by the use of compound jalap powder. Bloodletting gives prompt relief, but only temporarily.

Drugs designated to lower blood pressure directly are uncertain in their action. Nitroglycerin is probably more often useful than any other drug; next come nitrite of sodium, chloral, and sometimes Donovan's solution and aconite. It is probable that the vasodilators are used too early in many cases, as a moderate amount of increased tension is good for a patient with chronic interstitial nephritis.

When the heart has given out, as shown by dyspnea, cyanosis, and edema, rest in bed must be insisted upon. The diet should be eggs, cream, and cereals. Cathartics should be used freely. Digitalis (the tincture, the infusion, or the powdered extract, or digitalin, strophanthus, caffeine, strychnine, or camphor is indicated. Bleeding to the amount of 500 C. c. is of use, as well as an ice bag to the precordium. Morphine is to be considered a true heart stimulant, of great use in this condition.

Free elimination by the skin, lungs, and bowels is of the same importance in interstitial nephritis as in the parenchymatous form. The skin is kept active by daily warm or tepid baths. Sweating is induced only in case of edema or of threatened uremia. The elimination through the lungs is helped by fresh air and by attention to the heart to prevent pulmonary congestion. The bowels are kept active by fruit, green vegetables and the coarser cereals, salines, cascara, aloes, or senna. Occasional series of calomel or a dose of elaterin are given. Von Noorden has said, "given a case of nephritis with diarrhea, be in no haste to cure the diarrhea."

When the urine or the urinary solids are deficient, digitalis, caffeine, potassium acetate or theobromine sodiosalicylate are used.

Edema in this form of nephritis is often due to a failing heart. If not due to this

cause, the treatment is the same as in the parenchymatous form.

Anemia.—Iron (which should not be given for too long a period nor in excessive doses), fresh air, and moderate exercise are the most efficient remedies for anemia.

Stomach.—Appetite and digestion are often improved by the use of the bitter tonics.

Headache.—For severe headache, the bromides are often used. Coaltar products should be used with caution. The various means of lowering the blood pressure often held the headache as well. Morphine is often needed for the headache and for nocturnal asthmatic dyspnea; for the latter chloral is also used with some success.

Various specific serums have been used without any good results. The same can be said of the administration of raw kidney. A few years ago, Edebohl's decapsulation operation was tried many times, but the results were not encouraging.

One of the latest attempts at specific therapy is the work reported by J. F. Percy (*Journal A. M. A.*, November 9, 1912), who used thyroid extract with the alleged results of, 1, increasing the urine; 2, of causing the return of urinary solids to normal; 3, the disappearance of albumin and casts in from four to six weeks; 4, the reduction of blood pressure and, 5, the vanishing of local and general symptoms. Percy gives twenty grains daily for a week, then thirty grains. Apparently, clinicians are not in haste to take up this treatment, as further reports are lacking.

The writer is impressed with the vagueness of our knowledge of the proper treatment of chronic nephritis; he hopes that this résumé, culled from various sources, will arouse discussion and bring out some points of practical importance on what is surely an important subject.

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216 Seventy-seventh Street.

Oxaluria:

The following has been found useful where there is anemia and nervous atony:

Acidi Hydrochloridi Dil.	f. ℥ss
Tinct. Ferri Chloridi	f. ℥ij
Syrupi Simplicis	f. ℥ijss
Aquæ	ad f. ℥viij

M. Sig.: Tablespoonful three times a day through a glass tube. —Hazard.

REPORT OF CASES OF AMEBIC DYSENTERY TREATED WITH EMETINE*

By Jerome Wagner, M.D., of New York

Though there is no doubt that heroic doses of ipecacuanha administered in bulk has greatly lowered the death rate of amebic dysentery, it is far from an ideal method of treatment, aside from the fact of its many failures. Dr. Leonard Rogers, who has performed noble service in India in combating this disease, is responsible for the use of emetine, the active principle of ipecacuanha, in the treatment of dysentery due to *Amoeba histolytica*. Vedder has shown that emetine in dilutions of 1 to 100,000 killed the ameba in broth culture. At present there are still doubts as to the purity of these cultures, consequently Rogers determined to test the efficacy of emetine on the amebas as they exist in the stool. He found that placing mucus containing numerous active amebas in a physiological saline solution of emetine hydrochloride resulted in the killing of the amebas and in an instantly altered microscopical appearance, the strength of the emetine solution being 1 to 10,000. A solution of 1 to 100,000 resulted in death to the amebas within a few minutes. The first opportunity of testing the worth of emetine in the human subject came when a case presented itself where ipecacuanha could not be administered by mouth, and the results of the use of the drug were most gratifying. In his preliminary report Rogers cites three cases, one of acute hemorrhagic dysentery, one of chronic dysentery and one acute. In each case the drug effected a cure, whereas ipecacuanha had failed.[1] In these cases blood disappeared from the stools as early as the second day, and formed feces appeared. A later report by Rogers mentions twelve cases in which the drug had been used. This series of cases included all varieties and stages of amebic dysentery and its sequela, liver abscess. As Rogers states,[2] he had previously shown that in the vast majority of cases of liver abscess the pus in the liver was sterile, containing only the *Amoeba histolytica* (85 per cent. of cases). The cases of plain amebic dysentery he treated with hypodermic injections of emetine hydrochloride, though at first the hydrobromide was used, but was found to be too insoluble, the dosage varying from injections of one-third grain to one half grain twice a day, though at times as much as two-thirds grain was given at a dose. In fact, as much as one grain has

*From the Clinic of Prof. Jerome M. Lynch, N. Y. Polyclinic Med. School and Hospital, Med. Record, Jan. 31, 1914.

been administered subcutaneously. In this series two of the cases had abscesses of the liver and the third a splenic abscess. In the first case the pus of the liver abscess was aspirated and quinine injected, but this resulted in failure. The emetine was then resorted to. Eight ounces of pus were aspirated and one grain of emetine in two ounces of sterile salt solution injected into the cavity; cure resulted. In the other case of liver abscess, in addition to the injection of the emetine into the cavity, one-half grain of emetine was injected subcutaneously for four successive mornings. An abscess of the spleen was similarly treated and cured. In none of the cases did nausea or vomiting follow the use of the drug, regardless of the dosage; though one-third of a grain of the salt, emetine hydrochloride, is equivalent to thirty grains of ipecacuanha. Two cases of persistent bloody diarrhea were also treated with emetine, but without result. Subsequently these proved to be other than amebic dysentery. From this fact Rogers assumes that it is only in dysenteries of the amebic type that emetine is effective. To sustain his argument that emetine is specific in amebic dysentery, he claims that he lost one-third of his cases treated with ipecacuanha in doses ranging from thirty to sixty grains a day and one-quarter of the cases left the hospital uncured. He finds that the emetine may be given by mouth in one-third grain doses, providing that the stomach is empty three hours before administration and kept empty for three hours following. In these cases no nausea or vomiting has resulted. It might be interesting to peruse a table that Rogers has prepared showing the relative action of emetine hydrochloride and ipecacuanha. The table covers thirty cases treated with the latter and twenty-five with the former.[3]

	Died			Discharged otherwise			
	In 3 days.	After 3 days.	Of other disease.	Very bad.	Not cured.	Cured.	Total.
Ipecac	4	7	..	2	4	13	30
Emetine salts....	2	..	2	..	..	21	25

The two cases treated with emetine that died of other causes cannot in fairness be classified as failures, while the other two cases treated with emetine who died, were moribund at the time of admission. So it may be said that all the cases treated with emetine were successful. In those cases dying from other causes, the ameba was not found in the bowel post-mortem. With ipecac the average stay in the hospital was 16.4 days, with emetine 7.2 days. The stools became normal on an average of 11.4 days with ipecac, while with emetine they assumed their normal character in 2.35 days. The average number of grains of ipecac required was 406, with emetine two grains of the drug sufficed, the equivalent of 180 grains of ipecac. In two to four days all blood and mucus disappeared, while in acute hepatitis the pain disappeared in twenty-four hours. The temperature was reduced within a few days. In one case Rogers introduced one-half grain of emetine hydrochloride intravenously in 5 C. c. of saline with good results as to action. From this brief survey of the work of Rogers it can readily be seen that the active principle of ipecacuanha must be of undoubted value, and only time is necessary to render proof.

Allen[4] reports two cases of amebic dysentery treated with soluble salts of emetine, in one of which enormous doses of the drug were required. In this case the hydrobromide solution was first used, supposedly, but response came only after the hydrochloride was used in a dose of four grains. This dose caused nausea and vomiting. Lyons[5] reports six cases in which emetine hydrochloride was used with successful results in five, the sixth dying. In the five cases the stools became normal in nine days. Thompson[6] reports seven cases of cure after the use of emetine, one being a case of acute hepatitis. He states, further, that he has so treated one hundred and fifty cases, in some of whom the drug had no effect. This he explains by stating that in all probability they were a dysentery of the bacillary type. In these cases the emetine had no effect. The important item, however, is that of the dysenteries, 85 per cent. are of amebic origin.

There have been other isolated cases reported where emetine has cured an amebic dysentery.

No mass of evidence has ever been presented in so acceptable form, relating to the specificity of a drug in dysentery. Though Wadhams and Hill report three cases of amebic dysentery in whom the ameba dispappeared after treatment with neosalvarsan, no further record is at hand.

The first case of amebic dysentery in America was reported by Osler in 1890. Since then the presence of this disease in our community is more or less a recognized fact. Ipecac has had its advocates and its opponents. Phenomenal success has never attended its use in this country, particularly when the cases are not under hospital control. At our clinic in the New York Polyclinic Hospital we have seen over one hundred cases in the past twelve years.

While in most of these cases the diarrheal symptoms were severe, in only a small percentage was hospital retention necessary, and no moribund case has ever come under our observation. In all our cases the diagnosis was made only after the finding of the *Amoeba histolytica* in the stools, although we were always able to recognize the typical ulcers in the lower bowel.

In the cases reported below the treatment was ambulatory, the patient returning to the hospital each day for examination and treatment. In the first case the buttocks were used as the site of injection; but in the others, we used the fleshy part of the arms. We used one-half grain tablets of emetine hydrochloride dissolved in ten to fifteen minims of saline solution. In these cases we endeavored to give the patients total doses of three and one-half grains in daily fractions, thus consuming seven days in the treatment of a case. Proctoscopic examinations were made as frequently as was possible, and microscopical examinations of the stools were also made at each opportunity. These examinations were made on a warm stage, and the material used was obtained from the surface of the ulcers in the bowel. When ulcers were no longer present mucus from the bowel was utilized. At times it was necessary to give the patients salts by mouth in order to obtain good material for examination.

From the study of the cases which have come under our observation, and which we are reporting in detail, we find that the average number of stools per diem, before treatment was instituted, was twelve to fifteen. On an average of one and two-thirds days after the initial injection the number of stools dropped to one, ar at the most two, in twenty-four hours. At the end of a series of seven injections the stools numbered but one a day, and continue so to the present time. In all the cases the stools were fluid and freely mixed with blood and mucus before the first injection. In two of the cases the blood and mucus disappeared from the stools twenty-four hours after the first treatment, while in the third case the stools were free from blood and mucus on the third day after the first dose of emetine hydrochloride. This was the first time in years, the patient said, that his stools did not contain blood and mucus. On an average of three days after treatment had started, the stools became formed. In no case was the *Amoeba histolytica* found after the first twenty-four hours. It required, on an average, two days to relieve the patients of all tenesmus, in two of whom this symptom was very severe at the time they first came under observation. In all cases following the first injection the patients felt very much better according to their own statements, and in each case there was great improvement in the appearance of the rectal mucosa, as revealed by proctoscopic examination three days after the first injection; while at the end of a week little sign of the ulcers remained, however numerous at the first examination. At the end of two weeks, with the exception of a slight anemia, the mucous membrane of the lower bowel was absolutely normal, and even the anemia had disappeared at the end of three weeks' time. One month after the patients came under observation a protoscopic examination showed a perfectly healthy mucous membrane in the lower bowel. In all cases the patients felt better, generally, reported gain in weight, and ability to indulge themselves in varieties of food. None of the cases receiving hypodermic injections of emetine ever vomited following the injection, nor were they even nauseated. The site of injection never developed any pathological condition. In but one case was a blood count made, as reported hereafter.

Case I.—No. 240. P. M. Age 42. Male. Married. Occupation, bottle washer. Family history, negative. Past history, never ill before. Non-alcoholic. No tobacco. Venereal denied. Present condition dates back ten years, when patient had his first diarrhea. The stools at this time were watery and had a foul odor. One week later noticed blood and mucus in stools. At first the blood was dark, but later assumed a lighter hue. The stools now became very numerous, numbering twelve to fourteen a day; and associated with each movement there were severe griping pains in the abdomen and a bearing-down sensation in the rectum. He went to a hospital in this city where he remained for two weeks and was discharged as cured at the end of this time. He said the diagnosis of dysentery was made. For two years he was free from all trouble, then a similar attack occurred, more severe than the first. The patient went to a hospital in this city, where he was confined for two months, at the end of which time he was again discharged as cured. Two years later he had another attack, which necessitated his confinement in a hospital for three months. Since then he has been free, until three months ago, when the patient was again attacked with diarrhea. The bowel movements numbered fifteen to twenty a day, consisting mostly of blood and mucus. Though he had no abdominal pains between movements, he suffered severe tenesmus with and immediately following each movement. A severe headache was almost constant. In the past three months he had lost thirty pounds in weight.

Physical examination revealed a poorly nourished individual, evidencing loss in weight; dirty, yellow complexion, with appearance of a profound anemia.

Proctoscopic examination showed typical amebic ulcers in rectum. There was a large amount of blood and mucus in the canal from which emanated a characteristic foul odor. A specimen of this mucus was examined microscopically by Dr.

Jeffries (pathologist of Polyclinic Hospital) and the *Amoeba histolytica* was found.

Treatment: On May 14 two hypodermics of emetine hydrochloride were administered, one into each buttock. The dose was one-half grain. The following day this dose was repeated. May 15. On this day the patient said he felt better inasmuch as his bowels had moved but twice in the previous twenty-four hours instead of fifteen times, and in addition both movements were free from blood. The odor of the movements was still foul. On May 16, the following day, the patient reported but two bowel movements for the twenty-four hours, of a pea-soup consistency with but little odor. He had been absolutely free from all pain of any kind. A proctoscopic examination was made this day and showed a marked improvement over the previous existing conditions in the rectum. There was very little bloody mucus in the bowel. Another one-half grain dose of emetine was administered this day. Patient returned three days later, May 19, and was again proctoscoped. At this examination very few ulcerations were left in the rectum and the mucous membrane had a normal appearance. His stools were now formed, and for three days past his bowels had moved but once a day. On the 20th of May another half grain of emetine was given by hypo. Patient reported one movement in twenty-four hours, well formed and free from blood. No pain had accompanied the movements the previous week and the patient had gained one pound in weight. On May 24 a proctoscopic examination revealed but two ulcers in the lumen of the bowel while the patient reported regular daily formed movements. On June 3 patient came for treatment, reporting three loose movements after a glass of beer on June 1. On June 6 patient was again examined with the proctoscope, and showed a perfectly normal mucosa, with no signs of any ulceration, no mucus in stools or any amebæ in any of the excreta. Stools were now hard and well formed. On July 11 patient returned for observation and reported that he had some diarrhea after drinking beer or eating sour food. Was given five grains of ammonium bromide and ten grains of sodium bromide t.i.d. On the following day patient reported cessation of diarrhea and since then there has been no recurrence. One month later patient was still free of all trouble, regardless of what he ate or drank.

This was the first case in which we had an opportunity to test the efficacy of emetine as a specific in an amebic case. For this purpose the case was an ideal one. Typical ulcers were present in the bowel, the amebas were found and the patient was having from fifteen to twenty movements a day. The above history describes most graphically the effect of the administration of the emetine. Though we have no means of knowing, we might make bold and assert that in all probabilities the patient was not cured of his ulcers in the previous attacks, notwithstanding a two months' confinement in a hospital. As is well known in amebic dysentery, there are periods of rest where the patient has no diarrhea; and, in a small percentage of cases, there are even intervals of constipation. And although we have at present no means of knowing whether the patient will now remain free of his infection, the immediate action of the drug must be described as nothing short of most marvelous and gratifying. Our next case might be said to have been of even greater severity. The history is as follows:

Case 2.—No. 279. W. P. Age, 33. Single. Shoemaker. U. S. Family history, negative. Past history, diphtheria at thirteen. Malaria and dysentery in Philippines in 1899 (fourteen years ago). Chancroids in 1901 (sixteen sores). Moderate drinker and smoker. General diet. Present condition dates back to 1899 when patient contracted dysentery in the Philippine Islands. At that time had twenty to thirty daily movements with severe tenesmus. Was in the hospital for two months, and although at the time of his discharge he was improved, he still had three or four soft movements each day, occasionally passing blood. This condition had persisted for all these years and for the past six months he had had at least six movements a day with passage of blood and mucus. Occasionally he had severe tenesmus and complained of great weakness. He was at least thirty pounds under his normal weight.

Physical examination: The patient was extremely thin and sallow. The spleen was enlarged, though there had been no malarial attacks in seven years.

Proctoscopic examination: The entire mucous membrane of the lower bowel was thickened and edematous and there were numerous small and coalescel ulcers surrounded by an area of swollen white tissue. Temperature 99.6°, pulse 90, resp. 18. A microscopical examination of the mucus obtained from the surface of the ulcers revealed the presence of the *Amoeba histolytica*. Treatment was instituted on June 27, one-half grain of emetine being injected into the subcutaneous tissue of the right arm. This was repeated on the following day, the left arm being used. There had been no improvement. This dose was repeated on June 29 and 30, and on the last occasion patient reported but one movement for the preceding twenty-four hours, stating further that for the first time in years his stool seemed to be entirely free from blood. The movement was a semi-solid formed one. On July 1 the report was four stools, watery with traces of blood. Again one-half grain emetine was given by hypo. On the following day he reported three stools, soft, but no pain accompanying the movement or blood in the stools. One-half grain emetine was injected. July 3, the following day, was exceedingly hot and the patient felt very much depressed, consequently no emetine was given this day; there had been two soft passages in the past twenty-four hours. July 4, two movements, no pain. July 5, one movement, slight abdominal pain, no blood in feces. July 6 and 7, one stool, well formed, no blood or mucus. One-half grain emetine injected. On July 7, 8 and 9 there was one normal movement each day, without concurrent symptoms. On the 9th one-half grain of emetine was injected. On July 11 the patient returned for examination. His appearance was greatly improved, the pallor was not nearly so marked, his appetite was better and he was having one normal movement each day. A blood count was taken and showed 4,200,000 red blood cells and 15,000 whites, as compared with 3,800,000 red cells and 18,000 whites on June 23. A proctoscopic exam-

ination showed the mucosa to be somewhat pale and anemic, but absolutely free from any kind of ulceration or other abnormality. No mucus was present, except in normal state, and no amebas were to be found in the excreta. July 16 was the last visit of the patient and on this occasion the mucosa of the lower bowel showed a decided improvement over the condition existing five days previously. The anemia of the mucous membrane was no longer present, and, as before, no ulceration was evident. The patient said he felt like a different man, was having but one movement a day rarely two; stools were perfectly normal in character and to all intents and purposes a cure had been effected.

This case must impress the reader with the remarkable powers of emetine when injected hypodermically. Suffering from a constant diarrhea for nearly fourteen years, a mere shadow of his former self in body and mind, subjected to the ravages of *Amoeba histolytica,* abetted by germs in the lower bowel, finding a perfect media in the ulcerated areas; this man was relieved after three daily injections for the better part of three weeks, and at the end of three weeks was cured. Quite true is it that equally remarkable results have been observed following appendicostomy; but it must be borne in mind that whereas one is a major operation, attended with those dangers with which general anesthesia and intraperitoneal manipulations are always fraught, the other is a simple procedure—merely the administering of a hypodermic injection, a procedure which, if necessary, could be performed by the patient himself at any place or at any time.

Case 3.—J. S. No. 281. Age 26. German sailor. Present condition dates back to a sojourn in India, one year ago, since which time patient has had a steady diarrhea. This consists of a bloody mucus, watery stool, more frequent at night, at which the patient claims he has movements as frequently as one every hour. Proctoscopic examination showed that *Amoeba histolytica* was present, together with the typical ulcers of amebic dysentery. The general condition of the patient was good and on July 27 the injection of one-half grain doses of emetine was started and continued for seven days. The arms of the patient were utilized as the site for injection. After two injections the bowel movements dropped to one a day and so continued to the end of treatment, at which time the proctoscope showed that the lower bowel was clear of ulceration. Further trace of the patient was lost, as he failed to return after the seventh day. It is presumable that he had no further difficulty.

There is a fourth case, a private patient of Dr. Lynch's, that also responded most ideally to injections of emetine; but, unfortunately, the history and data of this case have been lost, and we are unable to cite the case in detail.

First thought might lead one to assume that four cases are only too few from which to draw conclusions or upon which to base statements of substantiation. The work and reports of other observers, however, are all characterized by the similarity of results, results which can be summed up in one word, "cure." Marvelous as the results obtained by the hypodermic injection of emetine, more wonderful still is the rapidity of action. As our cases show, within a few days of the initial injection, improvement is most marked. The number of movements decreases within three days, blood and mucus disappear from the stools in a period equally brief, while at the end of a series of seven injections of one-half grain of emetine each, the patient is apparently cured, the ulcerations within the bowels healing in that length of time. In none of our cases has the *Amoeba histolytica* been identified in the stools or mucus after the first injection. The most skeptical cannot fail to be impressed by the apparently deadly effect of emetine upon the ameba of dysentery.

Ipecac has been used for years in the treatment of amebic dysentery, with variable success. There have been many other medicinal remedies recommended, and only recently, as stated above, has salvarsan been used as a curative measure. There is no question, however, that medicinal treatment, up to the time of the use of emetine, has not been attended with constant success, and operative treatment has been resorted to. The object, of course, being a ready means of irrigation of the lower bowel. Two operations have been utilized, the cecostomy, as devised by Gibson; and appendicostomy, first used by Weir. The latter, to date, has been used more frequently and seems to be the operation of choice. Dr. Lynch, who has performed appendicostomies on over one hundred cases of amebic dysentery, has never met with any untoward results, and has never failed to effect a cure, providing the bowel was irrigated for a sufficient length of time. In these cases the opening was left for a varying length of time, depending upon the condition of the lower bowel, and the irrigations were always continued for some time after the bowel was free from ulcerations. The kind of solution used in irrigating the canal was of no material consequence, as the purpose is to keep the bowel clean. In the average case the appendicostomy opening was not closed before a lapse of two years. In the past year Dr. Lynch has been performing the operation under local anesthesia, thereby greatly lowering the operative risk. No difficulty has been experienced in performing the operation in this manner, and we thought the ideal method for treatment was at hand. Then came reports of the wonderful success of Rogers

in his treatment with emetine, and in the light of present results it would appear that the day of appendicostomy in amebic dysentery has passed.

The purpose of this paper is not to describe amebic dysentery, but the author of this paper would like to impress upon his readers that amebic dysentery is not epidemic or epidemic alone in the tropics. There are many cases in this section of the world, and only too many of them are not diagnosed. The reason for this, perhaps, is due in part to inadequate facilities to assist in arriving at a diagnosis. It is not easy for the inexperienced to demonstrate the amebas in the stools, particularly when it is remembered that below 65° F. the ameba ceases to move. On the other hand the man who has seen a number of cases recognizes the typical ulcers in the bowel, on proctscopic examination; but, here again only too few of us resort to proctoscopic examinations when a patient comes with diarrhea. Now, however, no case of persistent diarrhea should escape our hands without first proving to our own satisfaction the presence or absence of amebic dysentery. As Rogers has shown, emetine is a diagnostic specific. A few doses of emetine, injected hypodermically, will result in improvement in a diarrhea providing it is of amebic origin; on the other hand, if due to some other cause, the emetine is without effect. There is no danger attendant on its use, no constitutional effects ever having been observed. Indeed is this to be marveled at when one considers the deadly action of the drug upon the ameba.

We have had no experience with the drug in the treatment of liver abscess due to amebic dysentery, but as Rogers has shown, the drug is as potent as in an uncomplicated case of dysentery. For some unknown reason the occurrence of liver abscess, complicating amebic dysentery, is not as frequent with us as in the tropics, though no doubt many of the liver abscesses brought to the operating table could be traced to an amebic origin.

From our own experience with emetine hydrochloride injected in cases of amebic dysentery we draw the following conclusions:

1. Emetine hydrochloride is a specific in dysentery due to *Amoeba histolytica.*

2. The method of administration is hypodermatically in daily doses of one-half grain of emetine hydrochloride dissolved in sterile water, extending over a period of seven days.

3. The effect upon the pathological condition is most pronounced and immediate. At the end of seven days all the symptoms of the disease have disappeared.

4. The patient shows no ill effects from the use of the drug.

5. To date there has been no reason to suspect the possibility of recurrence.

6. Two or more doses may be injected in cases of diarrhea to assist in diagnosing the origin of the dysentery. Improvement indicates an amebic dysentery.

January 5, 1914. Since the writing of this article two additional cases have been treated with emetine hydrochloride with results similar to those obtained in our other case.

Within the past week, two of the cases originally treated have returned with recurrences. In each the amebas were found though the diarrhea had been of but a few days' duration. Emetine treatment has been promptly instituted.

Recently there have been other reports of recurrences, so it would seem that intermittent treatment with emetine is necessary.

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A NEW ATROPINE PREPARATION

One great disadvantage in using atropine lies in the fact that the active dose often closely approximates the toxic dose so that undesirable after-effects are very common. A new preparation, atropine-sulphuric acid has therefore been introduced and has been tested by A. Philippstal. He finds that this preparation paralyzes the intestines like atropine itself, the effect is, however, more gradual and three to five times less intense. The lethal dose is twice that of atropine. Clinically the drug is said to be of great value in asthma, vagus neurosis, in certain forms of tachycardia, in the night sweats of phthisis and in iodism. There seems to be no effect upon the gastric secretion. It is to be preferred to atropine sulphate since there are fewer after-affects, such as dryness of the throat, tachycardia and excitation. The only disadvantage is that subcutaneous injections are somewhat painful.—Berlin klin. Woch., Nov. 17, 1913.

A MILK DIET rigorously adhered to for a couple of days will often work wonders in bringing about the amelioration of acute dermatoses.—Urologic Review.

TONSILLAR TREATMENT*

By Seth Scott Bishop, B.S., M.D., LL.D., of Chicago
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It may be of interest to general practitioners to have a summary of thirty-seven years of experience in treating the more common affections of the throat. The object is to set down the simplest and most effective methods that time and clinical practice have approved.

ACUTE TONSILLITIS.

The simplest form, due to infection or a cold, is easily subdued in the following manner: spray the throat, while the tongue is depressed and the breath held for a moment, with the Dobell-Pynchon anti-septic solution, which is made after the following formula:

Pulv. Sodii Biboratis (C.P.)	
Pulv. Sodii Bicarbonatis (C.P.)	āā grn. xxx
Thymolis	3ii
Glycerini	3vi
Aquæ	q. s. ad Oi

Misce.

Then apply a 3 per cent. solution of silver nitrate by means of a curved cotton holder. Follow this with a spray of a 3 per cent. solution of camphor-menthol. The cotton carrier is best made of aluminum, with a rather attenuated point so as to penetrate the crypts. The rest of the carrier should be firm enough to prevent bending as it is pressed into the depressions. There is an advantage, also, in that the silver solution does not attack aluminum as it does other metals. When spraying the tonsils with an atomizer having a curved tip directed toward the crypts, sufficient air pressure, about 15 pounds, should be employed to drive the spray well into the lacunæ so as to evacuate them of all retained secretions, perhaps concretions, for these may have become decomposed and irritating and may be infested with bacteria, which are responsible for the inflammation.

Some practitioners make the mistake of directing the patient to sound the syllable, ah, while spraying the throat. This should not be done, for, while vocalizing, the expired column of air tends to eject the spray from the patient's throat and into the physician's face and over his clothing. While practicing this method in cases of diphtheria, many doctors have become infected and have paid the penalty with their lives. Although there are many other remedies, such as zinc chloride, that are effective, this simple treatment has proven so satisfactory that it does not seem worth while to multiply them. The fewer the medicaments the better, if they are the best. In throat diseases, as well as elsewhere, emphasis must be laid on the importance of proper diet, fresh air, exercise and effective elimination.

RHEUMATIC TONSILITIS.

In this form of tonsillitis, other than tonsillar tissue is likely to be involved. Both the mucous surfaces and the muscular supply of the larynx are often affected, and even the cervical muscles at the sides of the neck, the sternocleidomastoid, etc. It is evident, then, that both constitutional and topical treatment will be required. The deterfent solutions which are used in simple tonsillitis are applicable here, since cleanliness and disinfection are always in order. After these, guaiacol has rendered excellent service and has seemed to shorten attacks. The pure drug applied to the tonsil on a cotton carrier may prove to be painful, in which event it should be diluted with equal parts of glycerin.

Constitutional treatment should be instituted at once, with such remedies as sodium salicylate, salol and antipyrine. The latter remedy is useful in doses of five or ten grains every three or four hours, particularly in relieving pain. The salicylate and salol in 10-grain doses have proven to be efficacious in preventing the formation of abscesses. As this is a very painful affection, it is especially fortunate that we have in these well-known remedies a reliable means to abort the attacks when patients are seen early in the onset of the disease. Moreover, we have it in our power to anticipate future suffering by pursuing a prophylactic course of these remedies, alternating with lithia if the salicylate and salol produce their characteristic physiological action on the ears. This is evidenced by impaired hearing and subjective noises.

ULCERATIVE TONSILLITIS.

Reference is had here, not to tubercular or syphilitic ulceration, but to the simple form which is commonly seen in general practice. While the malady is often a painful one, both physician and patient are sometimes surprised to find the tonsils covered with an ulcerating surface when no such condition has been suspected. I have sometimes found such ulceration in children when making the routine examination of the nose and throat in ear cases, and

*Med. Times, Feb., 1914.

found the tonsils to be a mass of ulcers, although no complaint with reference to the throat had been made. The importance of this condition is apparent when we consider the close causative relationship of inflammatory action in the throat to diseases of the ear. Hence, the importance of early treatment.

The same cleansing solutions which have been previously mentioned, are appropriate here. After a thorough washing of the surfaces and crypts of the gland, a 10 per cent. solution of silver nitrate should be applied all over the ulcerated surfaces and carried down into the crypts, as well. Following this, aristol should be dusted with the powder blower over the gland and thrown into the diseased lucanæ. Ulcerative tonsillitis occasionally follows cauterization of the turbinated bodies. For this reason, the nasal cavities should be examined for any diseased foci, and treated if any are found. Here is illustrated the intimate pathological relation of the nose and throat.

There are instances in which the tonsils are diseased and are the seat of recurring inflammation, but in which patients object to an operation for their removal. I have succeeded in rendering such glands inocuous by means of the electric cautery employed as follows: Selecting three or four crypts at a time, a 10 per cent. solution of cocaine is applied to the interior of each crypt, not by spraying, but by means of a fine pointed cotton applicator, taking great pains to prevent any of the solution from escaping into other parts of the throat. After the crypts are sufficiently anesthetized, a suitably curved electrode is introduced into each crypt and the electric current is turned on, using a sufficient current to produce a white heat before the electrode is applied. In this manner each crypt is thoroughly cauterized, and the patients so treated have enjoyed freedom from subsequent attacks.

A warning should be given here against the use of much cocaine in the throat, particularly against spraying it into the pharynx. A deplorable accident happened to one of my former assistants: He had applied cocaine to the throat preparatory to operating, but before he began the operation the patient fell backward in the chair, gasped and died.

There are conditions of the tonsils which the foregoing methods of treatment are inadequate to correct. Such are greatly hypertrophied glands and those which may not be very much enlarged, but which are diseased and have become a menace to the organ of hearing and to the general health.

ENLARGED AND DEGENERATE TONSILS.

When and how should offending tonsils be removed? They should be removed (1) when they are sufficiently enlarged to obstruct free respiration; (2) when they embarass or muffle the voice: (3) when they give rise to a distressing sense of a foreign body in the throat and frequent swallowing in efforts to relieve it; (4) when they are the seat of recurring inflammation, which endangers the integrity of the ears, nutrition and the evolution of the jaw during the period of second dentition; (5) when they are associated with enlarged glands in the neck; (6) when there is reason to believe that they are an etiological factor in attacks of rheumatism; (7) in cases that are subject to repeated attacks of peri-tonsillar abscess; and (8) when they are associated with adenoid growths in the vault of the pharynx. These are positive indications for an operation, and in these conditions patients will be benefited, both locally and generally, by removal of the trouble-producing glands.

When tonsils are not enlarged to the extent of producing symptoms of their hypertrophy, and when they are not the seat of a diseased process, there is no good reason for operating. I speak thus dogmatically because I know that there are physicians who make it a practice to operate upon every enlarged tonsil, patron permitting, whether the gland has given rise to any symptom or not. This is like slicing off the end of every nose that is longer or larger tha nthe average. Nature placed these organs in the throat, and I have seen thousands of them which present no history of ever having given any offense. We do not yet know the precise relation that they bear to the system of ductless glands, or the relation of their internal secretion to the blood cells. The normal tonsil, also, is undoubtedly concerned in the production of the voice, by improving its resonance and assisting in giving direction to the column of air while keeping the pillars of the palate separated from each other.

While hypertrophied and degenerate tonsils may impede the movements of the system of muscles of the throat that are concerned in phonation, the healthy tonsils are an aid to normal voice production. By removing those that are so large as to interfere with perfect vocalization, the voice is improved. On the other hand, the removal of glands that are not pathological, or the

performance of a too radical operation, may impair voice production.

For an example of the former condition: an actress well known in America and England was compelled to relinquish her work on the stage because of voice deterioration. Examinaton revealed degenerate tonsils and chronic laryngitis. Believing that the diseased tonsillar condition stood in a causative relation to laryngitis I operated upon the tonsils. Treatment of the larynx soon reduced the inflammation, her voice was restored and she returned to the stage. This was severeal years ago, and she is still in the work. The cause being removed and the vocal organ being placed in a healthy state, it remained healthy.

Contrarywise, instances of injury to the voice have been reported as resulting from tonsillar operations, although I have never met a patient in whom tonsillotomy caused voice impairment.

TONSILLOTOMY VERSUS TONSILLECTOMY.

The choice of operation lies between tonsillotomy and tonsillectomy. By the former is meant excision of the tonsil, by the latter, complete enucleation of the whole gland.

By the use of the tonsillotome to guillotine the tonsil, a sufficiently thorough operation is had to remove all of the tonsil except a small cushion of tissue next to the underlying aponeurosis. But, in order to obtain this result, the operation must be performed differently from the method of many physicians. I have frequently found in patients brought to me for operation that the apex of the tonsil only had been merely clipped, leaving nearly all of the gland behind. Such a method is futile, since it does not accomplish the purpose of the operation.

In order to obtain satisfactory results, a reliable assistant should press inward very firmly over the base of the gland when the ring of the tonsillotome is forced down about it close to the aponeurosis. Then the knife will remove most of the body of the tonsil. If the pillars of the palate are adherent to the gland they should be freed so that the fenestra of the tonsillotome may embrace it near its base, without injury to the pillars.

A strong instrument is needed, so constructed, with the handle placed at a convenient angle to the shaft, as to give a powerful purchase. Then, with firm counter-pressure over the base of the tonsil, the largest part of it is excised. The remain ing section of tonsillar tissue leaves a flat wall instead of a deeply concave surface, such as we find after enucleation. This is enough to keep the pillars apart so that proper direction is given to the column of expired air in voice production.

With such a tonsillotome it is impossible to penetrate the ascending pharyngeal artery. Indeed, no cutting can be done deeper than the aponeurosis. I devised this instrument for the purpose of making the operation as easy and as safe as is practicable for those who lack the experience of the specialist. There has been recently too much of a tendency to recommend instruments and methods that are capable of doing harm, and, hence, to insist that the operation is of a major character, an expensive hospital procedure and beyond the ability and conveniences of the great body of general physicians. This attitude is in contravention of the true and traditional spirit of our calling and of the interests of our patrons.

Out of many hundreds of operations with the tonsillotome, I have had very few serious hemorrhages. At the present moment I can recall only three, and there was no bad result in these. The bleeding was controlled in every case in a very short time. I have never seen other than good results in any of my cases of tonsillotomy.

It may be interesting to cite another instance of the benefits of tonsillotomy; in this case I removed the tonsil on account of involvement of the corresponding ear. A school girl of nine years came to me complaining of sore throat, and deafness in one ear. She could hear my 60-inch watch only on contact with the auricle. I found the tonsil on the same side to be diseased. It had been subject to recurring inflammation for a considerable time, and I inferred that the inflammatory process extended through the eustachian tube to the tympanic cavity. I removed the tonsil and restored the throat and ear to a healthy condition, whereupon the hearing distance increased from contact with the ear to ten feet. This patient is now a married woman and is a mother and she has retained the above result up to the last time I examined her, about one year ago. Without removing the tonsil, which was the seat of recurring attacks of inflammation and a predisposing cause of deafness, I do not believe such gratifying remote results would have been obtained, the more particularly as there is a marked strain of ear diseases in the immediate and connected families.

Very little post-operative treatment is required for the operated surfaces. The cleansing solutions which have been already mentioned for acute tonsillitis may be used

for a few days, but with care to avoid dislodging the coagula that have closed the mouths of the blood vessels. Otherwise a secondary hemorrhage might be induced.

While tonsillectomy may be advisable in certain cases it presents disadvantages and objections which cannot be urged against tonsillotomy properly performed. Enucleation of the whole tonsil leaves a large concavity at the side of the throat, which gives an unnatural contour to the pharynx. Tonsillotomy strikes a mean between the two extremes of an original convexity and an artificial concavity. Tonsillotomy leaves a modicum of tonsillar tissue to keep the faucial pillars apart, enabling them to play their part in voice production. It also permits a continuation of a modified function of the gland. In this connection it is appropriate to refer to the fact that we do not advise the removal of the whole body of the thyroid gland. The medium ground is not only suggestive but logical. Tonsillectomy is followed by the formation of extensive scar tissue and contraction, which cause a drawing sensation or constriction and sense of dryness of the throat. I have never known these symptoms to follow my operations with the tonsillotome.

As to hemorrhages, I doubt if the two operations present any considerable difference. If any anesthetic is used, ethyl bromid is best.

The present generation is to be congratulated upon the tremendous interest that the medical profession has taken in throat diseases and the active and efficient means employed to relieve suffering and avert the secondary lamentable results. For these encouraging facts they are largely indebted to the enterprising medical journals and the efficient post-graduate medical schools. And the great body of medical practitioners should rejoice over the present advanced standard of practice and the steady forward march of its splendid achievements.

31 North State Street.

THE ADMINISTRATION OF IODIPIN

The subcutaneous administration of iodine preparations is, without doubt, to be preferred to other methods of giving this drug, especially as far as the patient is concerned, provided, of course, that it can be done simply and without unpleasant after effects. Edmund Hoefler, after using iodipin for several thousand injections, details the procedures, which he has found to be the most advantageous in the administration of this valuable remedy.

A syringe with a capacity of 10 C.c. should be used, a needle of medium calibre and 10 cm. in length. A 100 Gm. bottle of 10 per cent. iodipin can be used for fifteen injections with such a syringe, a 100 Gm. bottle of 25 per cent. for thirteen injections, thus introducing 0.6 and 2.0 Gm. respectively, of iodine, at each injection.

The points of injection should be along the line, where the prominence of the buttocks begins to decrease towards the gluteal furrow. Here more loose connective tissue, less muscle substance and fewer larger vessels are encountered than in other parts of the gluteal region and injections in this line rarely cause paraesthesias in the course of the sciatic or peroneal nerves. The fact that slight hemorrhages are more likely to occur in this vicinity, need not be considered, as all bleeding can readily be stopped by pressure with cotton.

The skin should be cleaned with ether or painted with tincture of iodine. The iodipin solution being aseptic, the syringe requires no sterilization. Needles should, if possible, be boiled before use, but if this is not convenient, they can be kept in absolute alcohol. It is superfluous to look for hemorrhage by removing the syringe from the needle after the latter is inserted, because in this region there are no large vessels, as to be injured by a 10 cm. needle.

It is not necessary to have the iodipin solution warmed to body temperature. If kept at room temperature and properly injected, it is borne without difficulty and causes no infiltration. Massage should be practiced for a few moments after the injection, to stimulate absorption. Compression should be continued until no more blood appears, in order to avoid the unpleasantness of a subsequent hemorrhage. Finally cover the puncture with cotton and adhesive plaster. It is best to have the patient lying on his stomach when the injection is made, but to obese patients the remedy can be given in the upright position. The administration of 10 C.c. of 25 per cent. iodipin every other day is a good rule to follow. More than 200 C.c. of the solution should not be used in one series of injections. There are no contraindications to its use, except, possibly, the presence of temperature. Diabetes, even in its severer forms, is not a contraindication.

In conclusion Hoefler hopes these reremarks will help the general practitioner, especially as the use of iodipin is likely to increase materially in view of the success obtained with it as a reducer of blood pressure and in conditions involving the prostate and neck of the bladder.—Dermatolog. Centralblatt, No. 6.

Progress in Materia Medica and Therapeutics

LACTIC ACID IN DIPHTHERIA

S. T. Nicholson, Jr., and J. F. Hogan, of Baltimore, give the results in nine cases of the use of lactic-acid-bacilli spray for ridding the nose of diphtheria germs. The results by this method were better than from any other used. Cultures from live lactic bacilli (Bulgarian type) were obtained and a small atomizer was used to distribute the culture in four cases. In five cases the ordinary sour milk was used as a gargle also. The nine cases are briefly reported. Their experience was encouraging enough for further study in this direction, and with its use and that of the intravenous method of administering antitoxin, of which a future report is promised, the hospital stay of the patients has been reduced. —Jour. A. M. A., Feb. 14, 1914.

TREATMENT OF ACUTE ILEOCOLITIS

J. Ross Snyder, of Birmingham, Ala., insists that the treatment of acute colitis in the child to be rational must be individual. The first and imperative need is for the cleaning out of the intestinal tract and for this purpose he uses castor oil by mouth and normal saline solution for irrigation of the bowels. Where there is persistent and troublesome vomiting the stomach should be washed following which calomel is administered in broken doses until one-half to one grain have been given. Later castor oil is given. Although the initial purge and irrigation is essential, yet it should not be continued daily, as it is not only useless, but destroys all possibility of rest to the inflamed and ulcerated bowel. A hyperdcroclysis of salt solution should be given without delay if toxemia of grave nature accompanies the onset. This procedure, too, while often useful and occasionally necessary, is not without danger, for after the heart has been weakened by the disease the injection is not only futile, but may produce disastrous results by overcrowding the heart. By stopping all food, by clearing the intestinal tract and where necessary by the use of the salt solution, the toxemia usually subsides and the disease becomes a purely local one. Where the peristalsis is continued and irritable the author uses opium more freely and he is of the opinion that there is no truth in the statement that children suffering with colitis do not bear opiates well. At any rate, they bear it much better than they do the wear and tear and strain which accompanies an irritable peristalsis. For this reason he thinks that it should be brought into quick service as soon as the intestine has been cleared of the toxic decomposing and irritating food residue. The author emphasizes the importance of keeping the child in bed in the recumbent position.

A CASE OF OXYCEPHALY

J. Thomson exhibited before the Edinburg Obstetrical Society a case of typical apical cranial deformity and facies in a girl aged 14 years. There were no deformities of the extremities or of other parts, and her intelligence was very good. Hearing was slightly defective and the optic nerves showed slight post-neuritic atrophy. The sight was fairly good for distance and very good for near objects. There were peculiar abnormalities in the ocular movements. The patient was put upon thyroid treatment and showed remarkable improvement, especially as to weight. Lately there has been an arrest in growth owing to stopping the thyroid treatment.

SPINAL ANESTHESIA BY TROPACOCAINE

In the Ingleby Lecture delivered by Professor T. J. Morrison at the University of Birmingham, a very favorable account is given of the method of inducing anesthesia by means of injection of tropacocaine into the spinal canal. The account is based on a series of nearly 1,300 cases in which this procedure was employed, the patients being of all ages, from 11 months to over 70 years. The drug is administered in 5 per cent. solution in normal saline fluid, and 1 grain forms an average dose for an adult. After the preliminary puncture is made 2 or 3 C.c. of the cerebro-spinal fluid are allowed to escape in order to delay absorption and to avoid increase of pressure in the canal. When the drug is administered the patient is first conscious of a sensation of warmth, followed by tingling and numbness, in the feet. Soon anesthesia is complete and is accompanied by inability to move the legs and by loss of knee-jerks;

the abdominal muscles are relaxed. The mental condition of the patient is generally calm, and abdominal pain, if present, is relieved. Anesthesia lasts for 30 to 90 minuts. Owing to blocking of afferent channels surgical shock is avoided, and after the operation there is little sickness, and food can be given almost immediately. The only drawbacks noted during anesthesia were occasional pallor and tendency to syncope, easily treated by stimulants, and after the anesthetic effects of the drug had passed off there were sometimes headache and backache of no great severity. In a few instances a trace of albumin appeared in the urine, owing apparently to some toxic action of tropacocaine on protoplasm, but no lasting ill effects on the kidneys were seen. In this series of cases no death directly attributable to the anesthetic occurred, the only fatality in which possible blame might have been attached to the drug being in an exhausted patient the subject of old calculous pyelitis, in whom a general anesthetic would have been inadmissible, and who died after being taken back to bed, 50 minutes after the injection. In two cases, both subjects of jaundice, temporary respiratory failure occurred on the operating table, but passed off under the usual measures of treatment. Satisfactory anesthesia is obtained by spinal injections over all the region below the diaphragm. It is not advisable to attempt to obtain a higher distribution by making the injection high up in the cord, as some risk is thus probably run. Cases especially suitable for this form of anesthesia are those in which there is respiratory trouble, such as bronchitis, or some grave condition of toxemia, such as uremia or diabetes. Cardiac cases and chronic alcoholic subjects are also better treated by injection than by a respiratory anesthetic, and emergency operations may be done by this means on persons who have recently taken food. A few days in bed should be enjoined after the procedure, which is therefore unsuitable for ambulatory use, and it may be barred by local septic troubles in the neighborhood of the seat of injection or by disease of the central nervous system. In some cases it is well to administer a small dose of morphine or some similar drug previously, or a general anesthetic may be combined with the spinal injection, being given either before or after the latter; for example, in the few cases in which for any reason the local anesthetic fails to act. The author emphasizes the value of the method as facilitating the work of the surgeon in the absence of a qualified anesthetist, and holds that it should be taught in all medical schools as an alternative to the usual methods.—Birmingham Med. Rev., Aug. 15, 1913, per Lancet.

TREATMENT OF GASTRIC ULCER

R. H. Pierson, of Fort Gibbon, Alaska, gives his experience with gastric ulcer as observed by him in robust miners and trappers in Alaska. Gastric ulcer seems to be their only digestive disturbance. The men all followed outdoor occupations, except one, who was a telegraph operator, and they were living mainly on a flesh diet with few vegetables. Their bread was generally baking-powder biscuits or sour-dough hot-cakes. Tea, coffee and some canned goods were also used; liquor was used excessively in only one case. With the rough food the cooking was poor of necessity. Under the conditions of life large amounts of food were required, and a high caloric value. For a time the patients got along well, but after a year or two of the life they began to show symptoms. In many cases it got no farther than an inability to digest beans. The patients came to town where they could get raised bread and green vegetables and cured themselves. The etiology, according to Pierson's view, is the overwork of the stomach. To meet the conditions a strong excessively acid gastric juice is hypersecreted and ulcer results. These patients never acquire gastroptosis or atony, their trouble being that of a strong stomach overworked rather than that of a weak one abused. This conception of the etiology of gastric ulcer may not apply to cases of persons of sedentary habits or city dwellers, but it is of interest as indicating the rational line of treatment in these cases. It consists of rest in bed for the first week, atropine and bismuth given before meals and sodium bicarbonate after, a saline aperient in the morning during the treatment, a cold pack over the stomach at night and a carefully regulated diet of moderate quantity, eaten slowly and well chewed, excluding stimulants, high seasonings, excessive sweets, meats and indigestible vegetables. The essential idea is giving rest to the stomach. The results in the patients treated were better than he would expect in city dwellers. The common idea that gastric ulcer is incurable is, he says, incorrect. It is a trouble, Pierson says, that may be expected to be submissive to proper treatment systematically carried out.

The stomach is as faithful as any beast of burden, and its efforts to meet the demands of its master are its undoing. The surgical treatment, he considers, is better adapted to the chronic flat ulcers than to the deep hemorrhagic ones, as in these cases described.—Jour. A. M. A., Jan. 3, 1914.

EXPERIENCES WITH IODIPIN, ESPECIALLY IN THE TREATMENT OF PULMONARY TUBERCULOSIS

The observations of E. Potheau and others regarding the favorable action of iodipin, induced Otto Baer to try the remedy not only in tuberculosis, but in other conditions, in which he considered a reliable iodine preparation indicated.

In a case of varicella he injected 5 C.c. of 25 per cent. iodipin every day for five days and noted marked improvement. Where the eruption had suppurated as the result of scratching, the local application of iodipin proved of benefit. The fall in temperature was especially noticeable. In ten days the child could get up and soon felt perfectly well.

A woman of 48, suffering from locomotor ataxia and having the typical epigastric pain, as well as a patient, with sciatica of long standing, were relieved by iodipin injections. The former received six 10 C.c. injections of the 25 per cent. solution, after which the pain ceased and had not recurred five months later. In the latter case three injections of 5 C.c. of 25 per cent. iodipin in the vicinity of the nerve caused the pain to disappear.

Two cases of chlorosis were successfully treated with iodipin. In one the haemoglobin rose from 70 to 90 per cent., the weight from 98 to 120 pounds, menstruation became normal and the enlarged thyroid showed considerable decrease in size. Five C.c. were injected every other day until 100 C.c. had been given.

Baer's experiences with tuberculosis were not confined to lung affections. A girl of 17 with tuberculous cervical glands, 60 per cent. haemoglobin and a trace of albumen in the urine received 10 C.c. of 25 per cent. iodipin three times a week for six weeks, with the result that the glands became smaller, the weight increased, the temperature no longer rose and the urine lost its pathological constituents. In another patient, a woman of 55, with severe pains in the left shoulder and arm, caused by an infiltration in the left upper lobe and pleuritic adhesions, ten injections of 5 C.c. of 25 per cent. iodipin gave considerable relief. Furthermore a patient with bloody expectoration and thrombophlebitis of the left calf was markedly benefited.

In ten cases of pulmonary tuberculosis of moderate severity Baer reports an improved general condition, increase in weight and haemoglobin, fewer rales and less cough and expectoration. In seven cases no tubercle bacilli were found in the sputum at the end of the treatment. The age of the patients ranged from 18 to 24 years. Three C.c. of 25 per cent. iodipin were given three times a week for forty injections. Pain or infiltrations were never observed, nor did headaches or symptoms of iodism ever occur.

The author then states that Max Berliner has reported equally good results by using a combination of menthol, eucalyptol and 25 per cent. iodipin. In conclusion Baer mentions a combination of eucalyptol, iodipin and a copper preparation that he has himself prepared, because he believes that copper acts specifically in tuberculosis. He expects to publish his experiences with this combination shortly.—Zeitschrift für Tuberkulose, vol. XXI, No. 4, 1913.

THE TREATMENT OF FURUNCULOSIS WITH TINCTURE OF IODINE AND ICHTHYOL

Being called upon, as a military surgeon, to see many cases of furunculosis, F. Berger, of Cologne, has for a long time tried to find a method for treating this condition, more reliable and simpler than those usually employed. The procedure, which has proven satisfactory to him, is based on a combined treatment with tincture of iodine and ichthyol.

The use of ichthyol alone in furunculosis is not new. Bloch speaks favorably of it in his book on skin diseases, as does F. Bruck. As early as 1901, Menahem Hodara described excellent results, from the use of pure ichthyol in furunculosis.

Berger only claims to be the first to use both tincture of iodine and ichthyol. He uses this combined treatment in two ways.

When the furuncles are soft, tincture of iodine is liberally applied so that an area, extending beyond the infiltrated tissue is covered. Should one of the furuncles be ready to break down and an incision be deemed advisable, the latter can now be made without fear of infecting surrounding structures. Over the iodine, a piece of gauze, on which 10 per cent. ichthyol vaseline has been spread 1/16 of an inch in thickness, is then placed. The gauze and some cotton are kept in place by a bandage or adhesive plaster. The next day, pus which may have broken through is wiped off and the ointment removed with benzine. The latter procedure is not painful as a rule, because the inflammation usually re-

cedes to a marked degree in 24 hours. The applications of the preceding day are then repeated. As soon as all the pus has been discharged or absorbed, it is important to stop the iodine so as to avoid follicular irritation. Continue the treatment with 10 per cent. ichthyol vaseline or pure ichthyol, as described later. It will be found that the secretion from the granulating surfaces will diminish very rapidly.

The real domain for this combined treatment with ichthyol and iodine is, however, where the furuncles are still hard and nodular, and where staphylogenic follicular and perifollicular foci are forming. Tincture of iodine is again liberally painted on, well into healthy tissue. Immediately thereafter, pure ichthyol is thickly applied with a camel's hair brush or cotton swab. It is either allowed to dry and no further dressing applied, or it can be covered while still moist, with a thin layer of cotton and the latter held in place by a single piece of adhesive plaster. On the next day, the dry ichthyol and any pus, that may be present, are removed with hot or warm water and thereupon iodine and ichthyol reapplied in the manner described. Iodine is continued until all redness and swelling have disappeared. If vesicles form under the adhesive plaster, discontinue the iodine. On the third or fourth day, one can usually stop using iodine, ichthyol alone being continued until signs of inflammation are no longer present.

In severe and obstinate cases, the administration of water or salts, containing sulphur, and of arsenic in some form, will aid in securing favorable results.

It is astonishing how rapidly the treatment, described above, causes the furuncular infiltration to be absorbed and the pain to disappear. Furthermore—and this is probably the most important feature—the formation of new furuncles is positively presented.

Whenever possible the latter treatment should be employed. The other plan with 10 per cent. ichthyol-vaseline is indicated only in cases, which have been neglected and are seen in the advanced stage.

How is the favorable action of this therapeutic procedure to be explained?

The mouths of the hair follicles are the points of entrance of the micro-organisms, causing furuncles. For the disinfection of these, as well as for the sterilization of the superficial layers of the surrounding skin, nothing is more suitable than tincture of iodine, whose antiseptic properties are so well known.

Ichthyol is an organic sulphur preparation and is capable of producing a lasting constriction of the blood vessels of the skin. It is less irritating than in organic sulphur compounds and has astringent, analgetic, anti-pruritic as well as antiseptic properties.

When these two drugs act together still other factors are brought into play. The presence of iodine and sulphur on the skin's surface and in its cells produces chemical combinations, which tend to arrest bacterial growth and stimulate cell activity.

The author knows of no preparation which acts more promptly on staphylogenic inflammatory foci and reduces the pain in the infiltrated area more effectively than ichthyol. He also knows of no method, after trying a great many, that can cure furuncles and prevent the formation of others, in anything like the short time, required by the procedure, detailed. The knife, which the patient always dreads, is necessary only in an exceedingly small number of exceptional cases. Not only is the duration of the treatment markedly shortened, but the use of bulky dressings is also done away with. Finally, because deep destruction of tissue is prevented, the resulting scars are soft and practically on a level with the surrounding skin.—Med. Klinik, No. 46, 1913.

NITRIC ACID CAUTERIZATION OF CHANCROIDS

E. W. Phillips, of Chattanooga, Tenn., has found the following routine effective: Cleanse the glands and prepuce with soap and water; apply hydrogen dioxide to the ulcer, remove secretions and dead tissue and dry with a piece of gauze, thus obtaining a surface capable of absorbing the anesthetic. Dust this surface well with powdered cocaine, or apply to it a bit of absorbent cotton saturated with a four per cent. solution of cocaine. Wait five minutes, test the anesthesia, and, if good, again dry the sore and cauterize it thoroughly with concentrated nitric acid. Apply the acid on a small swab, destroying all the softened tissue that forms the floor and undermined edges of the chancroid. If the foregoing procedure has been caried out, the acid causes no pain. In dressing, use a "penis roll" thirty inches long, conveniently made by twice folding lengthwise a strip of three inch gauze bandage. Apply this roll, comfortably tight so as to fill the sulcus, separate the glans from the prepuce, and completely cover in the sore. Moisten this dressing and keep it moist with black wash or a four per cent boric acid solution. Dress daily, or oftener if the dressing be-

comes displaced. When the slough separates, if the cauterization has been complete, there is left a clean ulcer which rapidly heals under daily dry dressing. Old or phagedenic chancroids may require recauterization on the third day.

If there exists an inflammatory phimosis, concealing the chancroid from direct attack, it can sometimes be overcome by soaking the penis for half an hour twice daily in a warm, one in 4,000 permanganate solution, introducing a drain within the prepuce, and applying a wet dressing. Should this fail to render the chancroid accessible within thirty-six hours, it is necessary to make a dorsal slit under cocaine, and treat the sores as above, bandaging back the preputial flaps. Usually in these cases multiple chancroids with an active balanoposthitis are found.

This technic gives much quicker cures and fewer buboes than any other with which the author is acquainted. Even if considerable inguinal adenitis exists it commonly subsides when the chancroid is properly cauterized and dressed. Rest in bed, and cold applications to the affected glands, are indicated in cases of this sort. A well developed bubo obviously requires appropriate surgical treatment; injection of iodoform, drainage, or enucleation of the glands. Genuine chancroidal infection of a lymph node, fortunately not common, requires nitric acid cauterization, free drainage, and frequent dressing.

It is necessary to follow up only a moderate number of chancroid cases to learn that the most typical of chancroids may precede a syphilitic eruption. Each patient discharged from treatment for chancroid should be warned of this, and instructed to return for observation at the end of a month. The clinical points that lead one early to suspect mixed infection are: An incubation period of ten days or more; induration about the base of an ulcer not irritated by previous treatment; and, especially, the persistence after cauterization of a sluggish sore, perhaps with some peripheral infiltration, that slowly extends and will not heal. In such cases a Wassermann test should be made after the chancroid has existed for two weeks, and if negative, repeated in ten days. If syphilis is found, vigorous constitutional treatment should be instituted at once. Every surgeon knows that nitric acid is effective in the cure of chancroid, but, possibly because of its apparent harshness, few use this agent except in refractory cases.—N. Y. Med. Jour., Dec. 20, 1913.

RECTAL INJECTIONS OF IODIPIN IN PROSTATITIS

L. Fischel has obtained excellent results from the use of rectal injections of iodipin in acute and chronic prostatitis. Ten C.c. of a mixture of 25 per cent. Iodipin and two parts of olive oil are injected into the rectum slowly, by means of a syringe, having a capacity of 10 C.c. and provided with a curved tip of hard rubber. 0.75 Gm. of iodine are thus administered with each injection. The patient readily retains the entire amount. The procedure is repeated daily; in mild cases every other day. Very often, inside of a week, improvement is noted and in two or three weeks the prostatitis frequently disappears almost entirely, a few massage treatments or irrigations, completing the cure.

It is not claimed that this iodipin treatment is successful in every case. However, the method is so simple and the percentage of excellent and rapid results is so large that the author hopes that it will be frequently used and his favorable experiences verified.—Münch. Med. Woch., No. 12, 1913.

TREATMENT OF ACTINOMYCOSIS

Ever since Thomassen discovered its remarkable therapeutic action potassium iodide has been used in the treatment of actinomycosis, and in the majority of cases with great success. From time to time, however, refractory cases are met with, and the author considers that probably the sluggish nature of the circulation in the neighborhood of the often edematous lesions is a potent factor in preventing the access of the salt to the diseased areas. Pinoy reports the case of a young girl who had such lesions in the neighborhood of the left inferior maxilla. They had been present about five months, and consisted of a dusky red indurated plaque, in which were interspersed soft nodules, and sinuses from which were discharged pus and serous fluid which were proved to contain the typical yellow grains of a ray fungus. The cultures on potato remained negative, those grown anaërobically on Veillon's gelatin medium were positive in five days, and the characters of the colonies corresponded with those of the variety called "the streptothrix Israeli." The patient was immediately placed on potassium iodide 100 grains daily, but in spite of it the lesions advanced from day to day and became more edematous, so that she was soon unable to open the left eye, while the upper cervical chain of glands became enlarged and very tender, and an evening temperature developed. The patient was then put

on a salt-free diet, and the plaque was stimulated with fifteen galvano-caustic punctures, and dressed with lint soaked in Gram's fluid. The potassium iodide was continued. There was a very marked improvement. The edema had decreased, the patient was able to open her eye, and there was no more pain. The complaint that saltless food was most unappetizing was met with the suggestion that she should savour her dishes with the iodide, and she followed it with complete success. Syrup of the iodide of iron was given additionally. Two months later further punctures with the galvanocautery were made, and the patient was discharged cured in August. An opportunity to treat a similar case has since arisen and the method was found equally successful. The point to note is that actinomycosis tends to obstruct the venous return and thus gives rise to edema which still further obstructs the circulation. The local condition is attacked with the galvano-cautery, and the general measures, so often used with success for the edema of renal and cardiac disease, namely, complete omission of salt in the diet, is a very useful adjunct in the treatment. The substitution of potassium iodide for the sodium chloride is an ingenious adaptation.—Brit. Med. Jour., Jan. 3, 1914.

ANAPHYLACTIC SYMPTOMS AFTER FIBROLYSIN

Two years ago a case was reported by Mendel, which had received several fibrolysin injections and in which there appeared suddenly after another injection, elevation in temperature, general malaise and headache. Mendel declared this reaction to be anaphylactic. Dethleffsen reports a similar case. The patient had the same symptoms as Mendel mentions, but in spite of them the author continued to give the fibrolysin and obtained an excellent and lasting result. The patient was a woman with peritoneal adhesions, following frequent attacks of cholelithiasis. Fibrolysin was resorted to with the idea of loosening these adhesions. After the tenth injection an eruption, resembling measles, appeared. The treatment was stopped. The pains became less. Three years later a change for the worse occurred and fibrolysin was again used, in conjunction with vibration of the gall bladder. After the third injection the patient became dyspnoeic and complained of a feeling of anxiety. Three days later a fourth injection produced a chill, temperature of 102 1/5° F. and sense of fear. With the idea that the vibration had opened an encapsulated pus focus, a blood culture was done and proved negative. A day later the temperature was normal. Catheterized urine negative. A week later, after intragluteal injection of fibrolysin, recurrence of the same symptoms. They disappeared in three days and the patient has felt well since.

The condition of the organs in general and the negative blood culture as well as the general character of the symptoms lead Dethleffsen to conclude that he had an anaphylactic process to deal with.—Therap. d. Gegenwart, Dec., 1913.

A NEW VASOCONSTRICTOR SUBSTANCE

In the course of some investigations on Eck's fistulas in dogs three years ago, C. Voegtlin and D. I. Macht, of Baltimore, were impressed by the fact that with the dehepatization or extirpation of the liver, after an anastomosis had been established between the vena cava and the portal vein of the dog, there occurred a train of symptoms similar to those produced by the digitalis bodies. It occurred to them that these symptoms might be due to some substance normally present in the blood which is destroyed by the liver, which is followed by its excess in the blood. They therefore attempted to isolate such a substance, using the following procedure: "Defibrinated blood-serum of oxen and pigs was treated with dehydrated powdered sodium phosphate or sodium sulphate. The dry mass was finely pulverized and extracted with water-free chloroform. This chloroform extract was evaporated to dryness and then treated with absolutely methyl alcohol. On evaporation, a white crystalline residue was obtained, very sparingly soluble in water, but freely soluble in chloroform, acetone, hot ethyl alcohol and other organic solvents. Study of the action of this substance on the blood-vessels of cold and warm-blooded animals and on the heart led to extremely interesting observations." They found this substance a powerful vasoconstricting agent with properties closely resembling those of the digitalis-like bodies. Using the same methods, they were able to extract a similar substance from human blood serum, blood-plasma (citrate and fluoride), and from red blood-cells. The vasoconstricting action of blood-serum, which has been previously observed, has been attributed to epinephrin. But this was shown not to be the case. The work of the authors and the crystalline substance isolated by them they think justifies them in regarding it as a substance entirely different from epine-

phrin or any other body hitherto obtained from the blood. "Neither is it identical with beta-iminazolyl-ethylamin recently isolated by Barger and Dale from the intestinal wall, and suggested by Kaufman as being perhaps responsible for the vasoconstricting action of serum." While they have not been able to get enough of the material for complete chemical analysis, their observations seem to point to its relation to cholesterin on the one hand, and to the cortex of the adrenal glands on the other hand. They also investigated this cortex in the ox and isolated a body whose action was in every way identical with that obtained from the blood-serum. As the function of the adrenal cortex has been hitherto unknown, the isolation of this substance and its relation to the vasoconstricting body of the blood is, they say, of a special interest.—Jour. A. M. A., Dec. 13, 1913.

TREATMENT OF CARDIAC DECOMPENSATION

Chas. H. Lawrence of Boston reports observations made on 26 patients with cardiac decompensation from various causes, including valvular cardic disease, arteriosclerosis with myocardial degeneration, angina pectoris, and chronic nephritis with hypertension. The digitalis was administered in the form of digipuratum, usually two or three tablets daily in all but one case, which received an active tincture. A brief description is given of each case, together with the average blood pressure readings before, during, and immediately after the use of the drug; also at the time of discharge from the hospital. The presence or absence of diuresis, and the other effects of treatment are also noted.

Of the 26 cases, 18 were discharged relieved; 76 per cent. had a fall in systolic; 86 per cent. had a fall in diastolic pressure. From these figures it appears that in the presence of cardiac decompensation digipuratum causes a fall in blood pressure as a rule, which is usually associated with an increased excretion of urine. The conclusions of the writer are:

The effects of various drugs on the blood pressure, as determined by experiments on animals, do not furnish reliable criteria for the administration of such drugs to man, since the effect may be quite different in the latter. The pressure raising effect of digitalis noted in animals and in healthy individuals does not occur, as a rule, when the drug is administered to individuals suffering from cardiac decompensation. The cause of the cardiac decompensation does not appear to affect the action of the drug. Digitalis preparations such as digipuratum may be safely administered to patients suffering from arteriosclerosis, angina pectoris, or nephritic hypertension, if cardiac decompensation is present; under such conditions it rarely causes a rise in the blood pressure.—Boston Med. and Surg. Jour., Jan. 8, 1914.

TREATMENT OF ALIMENTARY INTOXICATION AND ENTERIC INFECTION IN INFANCY

Jules M. Brady, of St. Louis, Mo., writes that in dysentery the initial purge is invariably indicated; in intoxication, owing to the profuse watery discharges, it may be dispensed with. For many years cereal waters have been the routine treatment for these disorders. When the general symptoms improved, small additions of skim-milk were usually prescribed. The time elapsing before the addition of milk varied from two to three days to ten days. This necessarily means a severe handicap to the nutrition of the infant. They become pale, weak and lose very much in weight. The large majority of these infants will withstand the acute symptoms; the problem has always been to nourish these babies after the acute symptoms have subsided. With the addition of milk to the cereal water, there frequently is a return of the acute symptoms marked by fever and aggravation of the discharges.

During the past few years brilliant results have been obtained both in intoxication and infection, by the use of protein milk, which has a formula of protein 3.00, fat 2.50, milk-sugar 1.50 and salts .50. In enteric infection the food administered, owing to the changes in the wall of the gut, is very liable to bring about an alimentary intoxication which was usually interpreted as a renewal of the infectious process. Protein milk, when properly administered, is not liable to be followed by a relapse. An improvement in the catarrhal symptoms sometimes follow the use of bismuth; opium will relieve pain, tannigen is non-irritating and is indicated at times in the subacute stage. The practice of administering antiseptics to kill off the bacteria in the bowel, the author is of the opinion is a delusion and a snare. Attempts have been made to influence the process by specific therapy; a serum has been prepared to combat infection with the Shiga bacillus, but clinical results have been negative. The use of vaccines have also disappointed. In view of the fact that from the clinical symptoms, it is impossible to de-

cide in the infectious cases which particular organism is at work, the only rational procedure would be the preparation of an autogenous vaccine; the isolated organism would have to be agglutinated by the patient's blood-serum before it could be held responsible.

The technic of the administration of protein milk is briefly as follows: In intoxication after the first-twenty-four-hour one teaspoonful of protein milk ten times daily made up with 1 per cent maltose and dextrin; water ad libitum. This amount is increased from 1½ to 2 ounces each day with the improvement of the little patient until 3 ounces are fed for each pound of body weight. In a few days the stools become formed (soap stools) and the percentage of malt-sugar is gradually increased to 5 per cent. The increase of the sugar must commence by the sixth or seventh day. For infants under three months, breast-milk is a *sine qua non*. In the infectious cases, after the twenty-four-hour hunger period, 300 Cc. protein milk, made up with 1 per cent maltose and dextrin, divided in six feedings, are ordered. Every second day the twenty-four-hour amount is increased until 3 ounces are fed for each pound of body weight. The percentage of sugar is increased as in intoxication. By this method it is possible to furnish the infant with sufficient calories at an early period and avoid a great loss of strength and weight. The danger of a secondary intoxication is reduced to a minimum, owing to the high percentage of the casein and the guarded administration of sugar.—Jour. Missouri State Med. Assn., Oct. 1913.

THE FREQUENT USE OF VERONAL FOR SEVERAL YEARS IN THE SAME PATIENT

When a patient requires hypnotics continuously for a length of time, it is considered advisable to change the drug frequently. However, the case reported by O. Grisslich shows that veronal can be recommended for prolonged use. A physician of 78, suffering from arteriosclerosis, myodegeneration, contracting kidney and prostatic hypertrophy, took in three years 422 Gm. of veronal in 742 doses.

Five to 10 grains at a time never failed to have a beneficent effect. The patient did not become accustomed to the drug, nor did it interfere in any way with his bodily functions or his psychic condition. After taking it, the patient himself laid stress upon the fact that he awoke with a clear head. Cumulative action was not observed and the kidneys and circulatory organs were not affected. Attempts to substitute for the veronal, trional, sulfonal or paraldehyde, failed, because the patient refused to take them, as he had never derived any benefit from them.—Med. Klinik, No. 46, 1913.

EXPERIENCE WITH DIPLOSAL

In his review of the newer antirheumatic remedies, Meidner, of Berlin, says that diplosal, the salicylic ester of salicylic acid, is superior to other salicylic acid derivatives on account of the large percentage of salicylic acid contained. As it is soluble with difficulty in dilute acid, it passes through the stomach unchanged. In the intestine it readily dissolves, gives off its salicylic acid gradually and is readily absorbed.

Gawrilow has shown that diplosal interferes with the proteid digestion of the stomach less than any other salicylic acid preparation.

As early as 1908 Minkowski stated that diplosal produces no undesirable symptoms. All later observers agree to this and confirm the excellent results obtained with the preparation in articular and muscular rheumatism, neuralgia, pleurisy, pericarditis with effusion and cystitis. Schwenk, especially, spoke of its value in the urological field, for instance, in gonorrhoeal affections. Moschetti suggests its use for the initial treatment of acute gonorrhea. Its effect in acute polyarthritis was satisfactory to all authors. In chronic articular rheumatism, Minkowski finds that it is not so reliable, because it failed to act sufficiently as a diaphoretic. Schaeffli used diplosal with excellent results in post-operative cystitis and considers it superior to aspirin in every way except rapidity of action. When used purely as an antipyretic, it was not satisfactory to Thür. Braun commends it for joint pains, following tonsillitis. Campora lays stress on its superior analgetic action. Diplosal is usually administered in doses of 7½ to 15 grains several times a day, either as a powder in milk or gruel, or in tablet form. The author states that 90 grains can be given pro die.—Therapie der Gegenwart, November, 1913.

Laryngitis:

The following may be used as a spray two or three times daily in cases of laryngitis associated with unpleasant dryness of the mucous membranes:

Sodii Benzoatis	ʒj
Sodii Bromidi (vel Iodidi)	
Glycerini	āā ʒss
Tinct. Eucalypti	f. ʒj
Aquæ Destillatæ	f. ʒviij

M. et ft. solutio.

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FEBRUARY, 1914

EDITOR'S NOTES

Ichthyol in Gastric Lavage

So much space has been given in medical literature to the therapeutics of gastric conditions, especially since the use of the stomach tube has become universal, and so much has been written on gastric lavage with all sorts of solutions, that at present one is inclined to believe that nothing worthy of attention or characterized by originality, is likely to be met with in this branch of therapy. However, the clinical-experimental studies of Alfredo Conti on ichthyol in gastric lavage (Archiv für Verdaningskrankheiten, vol. XIX, No. 5) are of more than passing interest, especially as the author did not publish the details of his very successful therapeutic procedure, until he had confirmed his clinical findings by experimental work.

Having observed excellent results from the employment of ichthyol in pathological conditions, that could be reached from the outside of the body, Conti decided to use it in solution for gastric lavage. For many years he achieved great success with it, even in obstinate and refractory stomach conditions. Not wishing this favorable action to remain a mere empirical fact, a series of experiments to determine what effect ichthyol had on the gastric functions was undertaken.

From the work of Borri it is known that the gastric secretions contain poisonous substances, that the toxicity is increased in certain pathological conditions and that lavage is of the greatest benefit in those cases, in which this toxicity is especially great.

With these facts in mind, Conti proceeded as follows: To determine the toxic coefficient of the test meal of a patient, the gastric contents were obtained with the aid of 500 C.c. of sterile physiological salt solution, then filtered and physiological salt solution added up to 1000 C.c. Of the latter mixture a quantity, sufficient to cause death, was injected into the femoral vein of a weighed rabbit. The same was done with part of the 1000 C.c. of physiological salt solution, used to wash the stomach, while in a fasting condition. The number of C.c., required to bring about the death of the animal, relatively to its weight, represented the toxic coefficient. The patient's stomach was then regularly washed, with ichthyol solution, 10 to 1000. In eight, ten or twelve days the toxic coefficient was again ascertained, a certain formula, devised by the author, being used to allow for changes in the weight of the rabbits.

It was observed that rapidly, very rapidly in some cases, the toxic coefficient became lower, even after five or six ichthyol treatments. This reduction of the toxicity became markedly greater after ten or twelve washings.

In order to exclude the possibility that other solutions might produce equally good results, Conti made careful investigations wtih other remedies and reached the conclusion that when ichthyol was not used, the toxic coefficient was reduced to a much smaller degree and clinical improvement was not obvious. In some cases where prolonged treatment with ordinary drugs proved of no effect, actual decrease of the toxic coefficient and general improvement were noted, even after a few irrigations with ichthyol.

He succeeded in having his patients retain the ichthyol solution as long as twenty-five to thirty minutes, the average time being fifteen minutes. Even very sensitive patients succeeded in doing this, and it is to this long continued contact of the ichthyol solution with the gastric mucous membrane that the successful results obtained, are attributed. Of course it requires considerable patience, perseverance and at times will power on the part of the physician to succeed in inducing the patient to retain the rather unpleasant ichthyol solution for so long a time, but Conti met with no patient, who could not hold the medicinal fluid for at least ten minutes, after a

few trials. The tube is allowed to remain in situ while the solution is in the stomach, as its removal might cause the patient to taste the ichthyol and vomiting would result.

By these means the author succeeded in curing, in a relatively short time, cases in which ulceration or abscess formation had occurred in the stomach. Hemorrhage, unless very severe, did not interfere with the treatment, a 1 to 1000 solution of adrenalin hydrochloride being added to the ichthyol water. The bleeding decreased from day to day without other medication, except an occasional rectal injection of gelatin. Although the toxic coefficient diminished rapidly in all cases, clinical improvement took longer to become manifest, usually between the twelfth and sixteenth treatment, after which the cure was as a rule accomplished. Cases of carcinoma of the stomach, which were either unsuited for or did not desire surgical interference, were also treated in this way. Although the progress of the cancer was not arrested, the general condition of patients, whose pylorus was patent, was favorably influenced to a greater extent by the ichthyol treatment than when ordinary lavage was employed. The prostration, which is certainly due to toxins produced by the tumor, becomes less. This effect is undoubtedly the result of the mechanical removal of poisonous products by the solution, as well as of the soothing influence of ichthyol.

The question probably arises, in some minds, what effects are produced on the intestinal canal by the relatively large quantity of ichthyol, which undoubtedly passes through the stomach, while the solution is being retained. In hundreds of cases, Conti could record no intolerance and slight inconveniences only. Rarely diarrhoea and mild pain were noted, usually in cases with pyloric incontinence. Colic never occurred. A beneficial action on the intestinal tract was observed in regard to constipation. Where diarrhoea existed with the gastric condition, either continuously or at intervals, the intestinal functions were regulated after a short period of exacerbation.

As a result of his determinations of the toxic coefficient of healthy and diseased stomachs, the author draws these conclusions:

1. The toxic coefficient of the normal stomach is less than that of diseased ones.
2. After the treatment with ichthyol the reverse is the case.

How is the latter favorable results to be explained? It is known that the gastric mucous membrane secretes antitoxic as well as toxic substances. Is it not then but natural to think that with the advent of a pathological condition in the stomach, the latter will in self defense secrete more toxic substances than usually. With ordinary washings these poisonous products are removed and cell function, inhibited by the pathological process, is influenced favorably. The author's observations force him to conclude that the ichthyol solution also removes the toxic substances, mentioned, and that by its long contact with the mucous membrane, the ichthyol exercises its antitoxic and soothing powers, as it does on the surface of the body. Naturally, therefore, as a result of this action, the diseased stomach will for a time at least contain less toxic substances than the normal organ.

A resumé of the cases, treated with ichthyol in the manner described, shows that besides the results obtained in carcinoma and ulcer, as mentioned above, favorable action and at times startling results were noted in achylia, hyperchlorhydria, gastroxynsis and gastrectasis.

Dosage of Styptol

Pick of Berlin calls attention to the fact that styptol is often employed in doses, which are not sufficiently large. Although in many cases a small amount, such as ¾ grains three times a day, will have an influence on the hemorrhage, nevertheless three or four times as much is needed in order to obtain the desired results.

The average dosage, used by the writer, was three tablets three or four times a day. This number of tablets was always well borne and, without exception, satisfactory effects were noted. The tablets are to be swallowed whole, with the aid of water. In these larger doses a sedative action was also observed, an effect quite to be desired in many cases.

In chronic metritis styptol acted very promptly upon the profuse menstrual flow, which occurs in this condition. In these cases it was use prophylactically and its administration begun several days before the beginning of the period. It was given in the same way in cases of tumors of the adnexa and satisfactory results were obtained in practically every instance. In dysmenorrhea, if given before the onset of menstruation, it promptly diminished the flow, if the latter was too profuse. In such cases, the sedative effect was of special advantage.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Basic Fuchsin in Surgery.—W. N. Donnelly, of Brooklyn, says that the most frequent chronic ailment of surface-car motormen is ulcer of the leg, which has come to be called the "motorman's leg." It is explained by the long-continued standing in one place, with no relief except by transferring the weight from one foot to another. The stimulation of venous return of circulation which his mate, the conductor, obtains by the slight amount of walking he can do, is lacking, and the average motorman of five years' service or more is liable to have one or more of the folowing conditions: (1) Varicose veins; (2) ulcer of the leg; (3) flat-foot; (4) hemorrhoids; (5) varicocele, all due to the same cause of long standing without walking. Having run through the whole scale of treatments and dressings for chronic leg ulcer without any uniform success and incited by the article of May and Heidingsfeld on the use of basic fuchsin and its non-irritant effects, he was induced to try this agent in the proportion of one part of five petrolatum and up to 100 of lanolin, in thirty of these cases of leg ulcer with only one failure to respond, and in this repeated traumatisms and alcoholic habituation must be taken into consideration. With such gratifying results he was led to use it in all cases of ulceration or loss of epithelium and tabulates the results. In burns, especially in electric burns, its effects were marvelous, and the soothing effect is very grateful to the patient. The only objection to the treatment is the bright red color of the dye and the difficulty of removing it, but this can be effectually done by the use of alcohol, even after a number of days.—Jour. A. M. A., Feb. 14, 1914.

A Simple Treatment of Anthrax.—An important communication presented before the recent International Medical Congress was that in which Salvatore Gucciardello, surgeon to the Hospital of Vittoria, Italy, described his rapid method of treating anthrax by means of live steam. The virtues of this method reside in its bloodless character and in the fact that it can be carried out with an improvised apparatus. Any kettle or vaporizer can be used, provided that it be fitted with a spout 2 cm. in diameter, bent in such a manner that the outer end points in a horizontal direction. Generally a temperature of 50° to 55° C. can be easily borne. The steam is directed upon the lesion and the normal parts that immediately surround it, the whole being enclosed within a cardboard cylinder, which serves to confine the action of the steam. The cardboard cylinder should be 30 to 40 cm. long, and may be held at a slight distance from the skin so that the steam may have ready egress. If the lesion of anthrax is on the neck or head, the latter should be wrapped in cold cloths, frequently renewed, in order to prevent cerebral congestion. From five to seven applications of the steam, of one hour each and at intervals of one and a half hours, may be given in the course of one day. During the intervals the sore part may be covered with gauze dipped in hot water. From the very beginning of the treatment the patient is said to experience its soothing effects. The pain diminishes, sleep becomes possible, and the temperature tends to subside. The extension of the disease process is stopped from the outset. The infected tissue becomes less hard, the characteristic sieved appearance becomes more marked, and a small amount of pus together with other substances, exudes from the openings. No washing or irrigation of the parts is necessary. The fever ceases and every sign of infiltration about the lesion disappears in mild cases in from two to three days, and in the worst cases in from five to six days. In cases that have been subjected to the knife the vaporizing treatment effects a still speedier recovery. The author's experience comprised fifty cases. The good effects of the treatment are attributed to the great degree of heat to which the diseased part is subjected. The temperature of 50° to 55° C. at the surface, and of 42° to 48° in the interior of the lesion serves to destroy the anthrax bacillus and the secondarily invading staphylococcus. At the same time the vitality of the tissues and their resisting power are increased.—Med. Record, Jan. 31, 1914.

Military First Aid.—Captain L. C. Garcia, U. S. A. Med. Corps, Washington, D. C., gives an account of first-aid appliance use in a railway accident to a troop train in Mississippi. Fifteen soldiers were killed outright, two fatally injured and all the rest more or less injured, including the one sergeant and two privates of the hospital corps. The detached service chest and hospital corps pouches were buried in the wreckage, but the first aid packages were worn by all and were available. Hemostats from an emergency case and first-aid dressing were used to control hemorrhage. Over ninety open wounds were treated, many profuse and freely bleeding, but there was not a single death. When the first relief train arrived, six and one-half hours after the wreck, the following conditions were found: "1. All hemorrhage had been controlled. 2. Wall tents sufficient to cover all severely injured had been put up. 3. All the injured had been dressed and bandaged, and the severely injured wrapped in blankets and placed on cots under canvas. 4. Stimulants had been administered to those needing them. 5. Analgesics had been used in every case in which it was necessary to control severe pain. 6. All lacerated, punctured or incised wounds and all abrasions of the tissues had been painted with tincture of iodin. 7. All injured were ready for transportation." The special points to be noted were the efficiency of the first-aid packet and the thorough understanding of its use by officers and men. The fact that in over ninety cases of open wounds there was only one infected is significant. This occurred in a case of compound fracture of the lower extremity which was pinned under the wreckage for eight hours, so that an occlusive dressing could not be applied. This was the only case in which amputation was required. A large number of severe lacerated wounds of the scalp were painted with tincture of iodin and stitched up on the spot. All healed by primary union. Dr. Garcia subsequently washed dried blood, dirt, sand and cinders from the scalp, but in all cases the healing was as stated. A list of injuries is given. The fact that all the cases were primarily treated by the wounded hospital men themselves speaks strikingly for their efficiency, and shows that the application of the military first-aid is as useful in railway accidents as in gunshot wounds.—Jour. A. M. A., Jan. 31, 1914.

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Miscellany

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EXOGAMY AND TOTEMISM.—The central feature of Mr. Heape's book on "Sex Antagonism" is a searching but courteous criticism of Dr. J. G. Frazer's views as to the origin of the primitive institutions of exogancy and totemism. Mr. Heape, writing as biologist and one specially interested in sexual physiology, contends that the distinguished author of "The Golden Bough," in his anxiety to do justice to primitive intelligence and volition, has failed to take due account of the power of instinct in determining the broad outlines of sex law and morality. Mr. Heape therefore dissents from Dr. Frazer's opinion that exogamy is the outcome of "horror of incest"; he contends that it is an expression of the natural law which impels the male to seek his mate among women whose power of attraction has not been diminished by familiarity. Exogamy is, in his opinion, a distinctively male product, an assertion of male supremacy, although he does not deny that it may have been subsequently modified by feminine influences, and in particular by the counteraction of totemic laws. Totemism, on the other hand, Mr. Heape regards as a creation of the feminine mind, a limitation imposed by her at a later stage of development upon male freedom, with a view to the consolidation of her own interests and those of her offspring. Its essence, according to Frazer, consists in the identification of a man with some natural object, and he seems to accept the statement that certain tribes believe that women are impregnated without the help of men by something which enters the womb at the moment when they first feel it quickened, as evidence that in its most primitive form totemism is associated with complete ignorance of the share of the male parent in reproduction. Mr. Heape professes scepticism with regard to the primitive character of such ignorance. The fact that certain tribes allege disbelief in the necessity of sexual intercourse, attributing conception to the agency of totemic spirits, is in his opinion due to the power of superstition to overcome instinctive knowledge and the results of observation, a power of which examples are by no means wanting among members of our own advanced civilization. He points out the convenience of a theory which enables an erring wife to account for an inconvenient pregnancy by the fact that she has ventured too near an area infested by fecundating spirits. Mr. Heape accepts Frazer's view that the origin of totemism is connected with the sick fancies of pregnant women, but considers that it was rather to influence their offspring, and to endow them with desirable qualities, than to confer life upon them that the agency of spirits, or of the natural objects accredited with spiritual powers, was primarily invoked and believed in. In discussing maternal impressions he gives some examples of considerable evidential value in support of his view that the widespread belief in the power of the mother to affect the tissues of her young by means of mental impressions may not be lightly dismissed. In the last chapter he gives a brief—we might almost say meagre—indication of the bearing of his conclusions upon the present relation of the sexes.—Brit. Med. Jour.

INTRAVENOUS NUTRITION.—When it became obvious to physiologists that the ingested proteins are not absorbed as such or even as slightly altered digestion products and it was demonstrated that these nitrogenous foodstuffs are structurally demolished to a considerable extent before leaving the alimentary tract, various hypotheses were formulated regarding the fate of the fragments. It was a prominent belief that instead of being further decomposed, the products, in passing the intestinal wall, are synthesized into protein again, with the resulting production of one or more of the proteins of the blood. As a recent writer has expressed it, this explained at one stroke both the failure to find amino-acids in the blood and the origin of its proteins. The hypothesis thus gave a serious importance to the cells forming the alimentary tube as an organ of protein synthesis.

The explanation has been shattered, however, by the subsequent finding of the amino-acids in the blood and tissues after their absorption. To this may now be added a remarkable demonstration of the capacity of the animal organism to utilize its nitrogen intake when supplied completely in the form of protein digestion products introduced directly into the circulation without having traversed the digestive tube. Abderhalden, in particular, has splendidly demonstrated the possibilities of maintaining animals for long periods in nitrogen equilibrium when the entire nitrogen intake was supplied in the form of amino-acids. Buglia showed that completely digested flesh in amounts equivalent to a day's protein requirement could be injected intravenously without injurious effect, if sufficient time were taken so that the rate of entrance of the products was similar to the rate of absorption in normal digestion. The injected products were mostly metabolized and excreted as urea. But it remained for the Danish investigators, Henriques and Andersen, to accomplish successfully the nutrition of animals solely by the route of intravenous injection of their food supply. By attaching a cannula permanently to the jugular vein (in goats) they were able to furnish a slow stream of completely digested nutrients hour after hour to the blood steam. The food consisted of glucose sodium acetate and inorganic salts, together with a solution of meat completely digested with both pancreatic trypsin and the intestinal enzyme erepsin. To continue such experiments in simplified parenteral nutrition for nearly three weeks and maintain the animals in nitrogenous equilibrium or even obtain a retention of nitrogen, as the Copenhagen physiologists report, is surely a significant contribution to the study of nutrition. It confirms the newer evidence that the intestinal wall need play no role in protein synthesis in the organism; at any rate, it scarcely seems imperative for the disintegrated protein to traverse the alimentary tube in order to become utilized in the normal manner. The apparent inactivity of the digestive appendages was shown by the minimal output of fecal matter—precisely as this occurs in starvation. The injected protein products were not rejected by the organism and eliminated through the kidneys; for day after

day-the urine was surprisingly like that which results when comparable foodstuffs are ingested in the usual way.

The accomplishment of the intravenous introduction of foodstuffs with evidence that they were utilized by the organism in a normal way is of more than purely theoretical interest. It brings fresh promise of potent possibilities in the way of parenteral nutrition and makes the likelihood even of successful intravenous administration of nutrients nearer realization. We have repeatedly insisted that one of the important problems for more immediate solution in dietotherapy concerns the discovery of satisfactory ways of nutrition when the oral path is excluded by considerations of disease. The perfection of rational methods of rectal alimentation and of these newer indications of the tolerance of other forms of parenteral nutrition are paving the way toward such a discovery—Jour. A. M. A.

Soap and the Skin.—It is not conceivable having regard to the powerful detergent properties of soaps, that they are entirely without action upon the skin of some persons at all events Certain skins, it may be fairly assumed, are not proof against the action of alkali, and soap acts as a detergent because it forms an emulsion with dirt and the liberated alkali removes the fat which causes dirt to cling. Any inquiry, therefore, turned to the question of the effects of soaps, though these are generally made with susensitiveness of the skin to the action of alkali. Owing to hydrolysis soaps when dissolved in water exhibit a marked alkaline reaction, and this is true also of the so-called superfatted soaps, though tsese are generally made with superior materials, and for that reason may be preferred. An interesting contribution on this subject appears in the reports from the laboratory of the Royal College of Physicians of Edinburgh. In an article entitled "Soaps and their Effect on the Skin" Dr. Frederick Gardiner points out that among the dearer toilet and superfatted soaps the proportion of mineral ash and alkali is at least as high as in the coarser types. When an alkaline solution such as that of soap touches the skin there is induced, he says, both an excessive secretion of the acid sebum and sweat, and a solvent effect on the protective epithelium. Reviewing the different ingredients found in soaps, he concludes that all soaps from their chemical constitution must be irritant to the normal skin. The effect varies, he states, with the individual skin, and is more pronounced in senile and diseased skins. Cotton seed oil and rancid fats, according to his observations, are probably largely responsible for the irritant effects in cheaper soaps. Castor oil soap he finds, is least irritating, but it has the disadvantage of being too freely soluble and therefore wasteful, while it is apt to become rancid. Cocoanut oil soap is decidedly irritating, while palm oil soap, though still an irritating variety, is less so, and tallow soap shows a low irritating value. If these deductions are correct Dr. Gardiner thinks they supply a reason for the bad effects of modern domestic soaps of the cheaper and clothes-washing kinds, as they are made mostly from cheaper fats and the cheap oils, cocoanut and cotton seed. Formerly tallow and olive oil were more used and the evil effects of soaps were not so pronounced at that time. No one can be in touch, he says, with the out-patient department of a large hospital and not observe the economic loss, not to speak of physical damage, due to soaps and soap powders. If hands were considered as well as the clothes, and more of the old fashioned joint oil pressed into service, the results, he considers, would tend to lessen this serious and increasing occupation dermatitis. The demand for soap is, of course, very great and it would probably be difficult to meet this demand if the soap makers were limited to special materials. Still we think that some attention might be given to the manufacture of soaps with the view of carefully distinguishing those suitable for the cleansing of the skin and those for less refined purposes, and that a classification of soaps on these lines should be more rigidly pursued than has hitherto been the practice. The probability is that soap is used far in excess of actual requirements, and we agree with the advice that a minimum should be employed, and that minimum should be well washed off.—Lancet.

A Unique Case of Pluriglandular Insufficiency.—At a recent session of the Charité Hospital, Berlin, Maase presented a genuine case of this condition with autopsy finds. The patient was a Russian girl, aged twenty-four, of epileptic and diabetic ancestry. She had been normal in every way up to the age of eighteen years, when she developed ophthalmoplegia. When approximately twenty years old she developed a sort of myxedematous state, attended by suppression of the menses. A physician found glycosuria, and a positive Wassermann reaction. Later the author discovered a spinal curvature. The progress of the case suggested myxedema to the exclusion of other affections. At the same time there was a shrinkage in the body measurements represented by various deformities. The bone condition developed some resemblance to osteomalacia. Death occurred unexpectedly from erysipelas, thereby giving an opportunity for autopsy. Radiography had shown a normal sella turcica, but the hypophysis, normal in size, was adherent to the bone, and of firm consistence. Thymus remains were quite abundant, while the thyroid was abnormally small in both lobes. The pancreas was small, consisting largely of fat and connective tissue. The adrenals were normal to the naked eye. The ovaries were abnormally small and showed no Graafian follicles. The bones were very much thinned and brittle. The liver was fatty. The other organs were normal save for the heart

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which exhibited the changes to be expected after death from erysipelas. The author explains his case on the assumption that the condition of the thyroid was responsible for myxedema and possibly for certain psychic manifestations, but beyond that he could not go, save perhaps to hold the abnormal pancreas responsible for the diabetes. The adrenal bodies alone of all the endocrinous glands were normal, so that the case may be termed subtotal. In no other similar case reported has there been glycosuria.—Med. Record.

If a Cursory Examination of a radiograph shows no fracture, in a case where clinical signs indicate its presence, look carefully within the bone shadow for the evidence of a fissuring or subperiosteal break.—Amer. Jour. Surg.

Periods of Stress in Human Development.—In the Section of Stomatology, International Congress of Medicine, held in London, last July, a paper on periods of stress in human development was read by Dr. Eugene S. Talbot, of Chicago. The speaker pointed out that the embryonic history of man as well as the lower vertebrates is essentially the same as that of the invertebrates. The differentiation lies in the development of some structures and the sacrifice of others for the benefit of the organism as a whole. In the process of development from the primitive cell, periods occur in which unfavorable influences act so as to occasion a stress or struggle. If the stress falls on one organ local changes may result in arrested or excessive development, that is in the degeneration of the particular organ. Three kinds of unfavorable influences affect the organism or its parts, the mechanic, toxic and nutritive.

Struggle for existence on the part of the different organs and systems is most ardent during periods of evolution and involution. For instance, a check or an excess of growth of the higher organs of the nervous system frequently results in impairment of the mental faculties to the extent that any of the degenerations may occur. In these cases the brain remains in the stage characteristic of the common simian ancestor, or the higher faculties may attain only the development of primitive races in whom emotional control and ethical ideas are insufficient to meet the exigencies of civilized states. The power of passing through the fetal periods of stress depends upon the condition of the fetal organs at the time of these periods stress, partly on inherited factors and partly on maternal conditions.

During the entire developmental life of man extending over the first thirty years, there are marked changes in the nervous system and associated organs. There is constant demand on the powers of nutrition. The first period of stress is infancy. The second period involves a series of changes which occupies the time from six months to two years after birth. The second dentition, beginning with the sixth year, forms the third period of stress. The fourth period is ushered in by puberty, and finally the climacteric period, marked in women about the fifth decade, and the failure of the sexual powers in man, coming somewhat later, necessitate readjustments of metabolism of great importance to all organs, and note the fifth period of stress. The last period is that of decadence and senility. The author emphasizes the importance of periods of stress in the development of the human fetus, laying much emphasis on the fact that the greatest care and protection as well as careful study should be given to parent and child so that degenerative influences may not lessen the chances of survival or aid in furthering the degenerative tendencies of the human race.—Med. Record.

An Energy Index.—J. H. Barach, of Pittsburgh, Pa., says that we need an index to intravascular tension and the amount of energy which the circulatory system expends in a given time. We need this especially in cases in which the heart or blood-vessels are endangered. For this means he proposes the use of the manometric record of the arterial circulation during systole and diastole, together with the pulse-rate, or what we may call the energy index, or S. D. R. index. The systole gives us the energy factor in the work of the heart. The diastole gives us the energy factor in the peripheral resistance. From the pulse-rate we know how many systoles and how many diastoles there are to each minute. The advantages claimed for this method of indicating the expended energy are: that we are not deceived by the high maximum pressure when combined with the relatively low minimum pressure, or vice versa, and we do not neglect the pulse-rate, which he thinks has been too much left out of consideration. He gives a table of the findings in a series of 289 young men, the extremes in which show that taking the maximum pressure alone, as has been so commonly done, we get very little idea of what is going on.—Jour. A. M. A.

Subperiosteal Fracture of the patella is an occasional cause of persistent pain and stiffness in the knee. It is one of the various things that may be discovered upon radiographic examination in cases of obscure joint disability.—Amer. Jour. Surg.

The Refinements of Detection.—In spite of the extreme delicacy of many scientific tests, notably those in which the services of the spectroscope and electroscope are enlisted, the eye and the nose are capable, in regard at any rate to some substances, of an equal refinement of detection; they can detect quantities as inconceivably small. When we reflect, for example, how great is the tinctorial power of some of the modern aniline dyes, it must be obvious that in very great dilutions when the eye still observes color the quantity of material present must be quite microscopic. Comparatively recently there has been introduced a series of dyes which ousted the eosins; they are known as the rhodamines, and yield magnificent red shades. The dye classed as G extra continues to show distinct color obvious to the eye in a solution when there can be present only, and probably less than, one ten-billionth of a gramme. This means that in a milligramme of solution there is present at least one particle of color substance weighing less than 0.000,000,000,000,1 gramme. The sense of smell is capable of detecting even smaller amounts of particles, for the presence of otto of roses in the air is readily recognized when only one-third of a thousand-billionth of a gramme (0.000,000,000,000,000,333 gramme) of the volatile oil is present in a cubic millimetre of air. It seems evident from this that the mere existence of an odor in the air can have very little chemical significance, and that any physiological effect it may produce (e.g., nausea) is a depressing one upon the nervous system, and not that of a toxic sub-

stance introduced into the blood stream. When the extremely minute quantities of substances which it is possible thus for the optic and olfactory nerves to detect are compared with the capabilities of, say, the spectroscope, it will be found that the human mechanism compares favorably with this intrument in regard to its powers of detection. The spectroscope is generally regarded with wonder because of the very minute quantities of substances which it will disclose. But when we find that in the case of neon it will detect the presence of 0.000,005 cubic centimetre, and in other examples 0.000,06 milligramme of strontium, 0.000,01 milligramme of lithium, and 0.000,000,3 milligramme of sodium, it will be seen that these quantities are gross compared with the detective powers of the human nerves. In, however, the scientific instrument used in electrical observations, the electroscope, the human agencies meet with a formidable competitor, for a delicate electroscope is nearly a million times more sensitive than a spectroscope. The modern instrument will detect one millionth of a millionth of a milligramme of radium. These refinements of detection suggest that they are capable of laying bare particles which are not matter at all, but energy; the infinitesimal is detected and weight, as we ordinarily know it, can scarcely enter into the calculation.—Lancet.

Enterotaxis.—The heading of this annotation does not refer to a new disease, but to an old anatomical term, which we now find in no medical dictionary. Indeed, we have only discovered it in bygone French theses, where its exact meaning is obscure. It would seem, from the vague and lengthy description given of it by one writer, to refer to the arrangement of the viscera and to their displacement. Ancient medical nomenclature has often fallen into complete disuse owing to its lack of definiteness. Yet the medical men of the past held decided views about visceral displacement, and in the bills of mortality to a late date in the eighteenth century "The Rising of the Lights" was solemnly given as a frequent cause of death. What this disease may have been it is impossible to guess. "Rising in the Body" is put down as a distemper in cattle in Bailey's Dictionary as late as 1737, and perhaps the term is still used by some farmers. It may be that this cattle disease was kindred to "the rising of the lights" and to pathological enterotaxis. The non-medical world held extravagant views as to the possible migration of the vital organs within the body. Old Lord Neaves, referring to the illness of the Marquis de St. Just, an ancestor doubtless of the notorious member of the Salut Public Committee, wrote a witty epigram to this effect:

A certain statesman found to have the stone,
Was doomed to undergo an operation;
Amongst his friends, the fact becoming known,
Occasion'd much remark and conversation.
"How came he by this ailment?" some one cried,
"I scarce know anything that could be sadder."
"The explanation's clear," a wit replied,
"His heart has just slipp'd down into his bladder!"

A French version of this may possibly be familiar to readers of memoirs of the pre-Revolutionary epoch. To our ancestors a journey by the heart into some adjoining cavity appeared quite feasible, and that in a physical, not metaphorical, sense. The penetrability, or,

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at least, accessibility, of the bladder was believed in by the ancients, for we find Soranus of Ephesus gravely suggesting that stone might be gnawed into dust by a mouse. The *mus,* however, in this case might be a lithotritic instrument. Displacements of the intestines play an important part in the Scriptures as a cause of death. Thus Jehoram died, after two years, of a disease of the bowels which "fell out by reason of his sickness." Judas Iscariot "burst, and all his bowels gushed out," when he fell headlong in Aceldama. The deaths of the very few Roman Emperors who died in their beds likewise suggest mysterious speculations. The historians, as recorded by Gibbon, leave us very much in the dark concerning them, but their entrails seem to have possessed, in the opinion of observers, remarkable travelling propensities. English rustics, in reciting the causes of death of parents or relatives, are often as vaguely inexplicit as the august ancients. Thus a rustic's mother, we have heard, died not long ago of the bowels gushing out of the mouth. This surely is a rarely observed set of conditions.—Lancet.

Fracture by Slight or Indirect Violence suggests the possibility of some disease of the bone; so does non-union.—Amer. Jour. Surg.

The Absence of Displacement in a fracture of the olecranon gives no promise of immunity from impaired function; callus formation may interfere with the joint action.—Amer. Jour. Surg.

Marriage Hints.—Reason should be consulted —that is, if love will allow it to have the floor for a single moment. The truth is, however, if one might use a term prevailing in pugilistic circles, that in love matters reason is like to be most hopelessly "floored." It were well indeed if, before it is too late, men might have an eye to Benjamin Franklin's advice in regard to large families and the age of marriage.

Mr. Henry T. Finck, in his fine book on Romantic Love and Personal Beauty, has collected some statistics, concerning which Mr. Galton observes: "One of his conclusions was that morality is more often found among members of large families than among those of small ones. It is reasonable to expect this would be the case, owing to the internal discipline among members of large families, and to the wholesome sustaining and restraining effects of family pride and family criticism. Members of small families are apt to be selfish, and when the smallness of the family is due to the deaths of many of its members at early ages it is some evidence either of weakness of the family constitution, or of deficiency of common sense, or of affection on the part of the parents in not taking better care of them. Mr. Holland quotes in his letter to be a piece of advice by Franklin to a young man in search of a wife, to take her out of a bunch of sisters, and a popular saying that kittens brought up with others make the best pets because they have learned to play without scratching. Sir Wm. Gull has remarked that those candidates for the Indian service who are members of large families are on the whole the strongest."

A second bit of advice given by Franklin is, perhaps, less unquestionable: "From the marriages that have fallen under my observation I am rather inclined to think that early ones stand the best chance of happiness. The temper and habits of the young do not become so stiff and uncomplying as when more advanced in life; they conform more easily to each other, and hence many occasions of disgust are removed. * * * 'Late children,' says a Spanish proverb, 'are early orphans.' With us in America (1768) marriages are generally in the morning of life; our children are, therefore, educated and settled in the world by noon; and thus, our business being done, we have an afternoon and evening of cheerful leisure to ourselves. * * * By these early marriages we are blessed with more children; and from the mode among us founded by nature, every mother suckling and nursing her own child, more of them are raised. Thence the swift progress of population among us, unparalleled in Europe."

"Marriages," says Theodore Parker, "are best of dissimilar materials," and Coleridge remarks, similarly: "You may depend upon it that a slight contrast of character is very material to happiness in marriage." But would it be possible to present two individuals who did not present a "slight contrast of character?" Coleridge did not, apparently, think much of the average conjugal union of his day: "To the many of both sexes, I am well aware, this Eden of matrimony is but a kitchen garden, a thing of profit and convenience, to an even temperature between indifference and liking. What a married person wants is a soul mate as well as a house or yoke mate."

Young men are often warned not to marry for beauty, because it is but skin deep. But surely a millimetre of beauty is worth more than a yard of ugliness, though whitewashed with rank, money or general utility.—Dietetic & Hyg. Gazette.

How About You.

"It is a well known fact that mostly everybody has a well developed bump of curiosity," said the practical man.

"Think so?" inquired the other.

"Yes; most of the people who see this paragraph will turn the ARCHIVES up side down."

Dyspnea and Cyanosis.—There are many sufferers from cardiac and renal disease who at one time or another are troubled with dyspnea. On observation these patients separate themselves readily into two classes, those in whom the dyspnea is accompanied by cyanosis and those who, although suffering extreme distress even while quietly at rest in bed, exhibit no cyanosis. This observation has been made before, but until recently there has been no attempt to determine its significance. Thomas Lewis has recently published (Brit. Med. Jour., Nov. 29, 1913; Heart, 1913, V, 45) the results of some investigations which he has made with the help of several collaborators. Dyspnea may result from stimulation of the respiratory center by an increase in the CO_2 content of the blood. Such dyspnea is practically always accompanied by more or less cyanosis. Dyspnea following exertion is due at first to CO_2 concentration, but is maintained for long after the blood is properly oxygenated, by the presence in the blood of an excessive amount of lactic acid. Working along this line in cases of so-called cardiac or renal asthma, where cyanosis was absent, they were able uniformly to find "a diminished alkalinity of the blood." It is claimed that "any increase in the acidity of the blood increases the depth and rate of respiration and the connection between these observations is obviously

very close." Of course the keystone of the whole work is the method used for the determination of the reaction of the blood. This is based upon the contention that any increase in its acidity means a decrease in the affinity of the corpuscles for oxygen while an increase in the alkalinity means an increased affinity for oxygen. Specimens of blood were exposed to oxygen for a definite length of time and under fixed conditions and their oxygen content determined. These figures were then corrected for the varying hemoglobin content of the specimens examined. Lewis is inclined to believe that dyspnea without cyanosis is due to a condition of acid intoxication and not to the presence of carbon dioxide or alpha oxyacid radicals. It occurs usually in elderly subjects who have lesions in the heart, arteries, and kidneys in varying degrees. He claims that there is no essential difference between cardiac and renal asthma, so-called; and that the dyspnea of the cardiac cases is in reality due ultimately to renal defects.

If it can be properly substantiated, this work is really of great importance. It supports Martin Fisher's contention that renal defects are constantly accompanied by an increase in the acidity of the kidney and makes more rational the alkaline treatment which Fisher proposed. If an acid intoxication is the cause of the dyspnea of cardiorenal disease, why may it not be an important factor in the production of uremia as it certainly is in the terminal stages of diabetes? The "bibi-diffusion" experiments of Abel and his co-workers might possibly be used in such an investigation though no attempt has yet been reported to adapt them to the study of disease in man. It is certainly desirable that the investigation be pushed vigorously for chronic nephritis is very largely an unknown territory.—Med. Record.

Curious Legal Trials.—In Mr. L. F. Salzmann's Mediaeval Byways there are accounts of several curious legal trials in which doctors were concerned. A curious case came into court in 1292. Mauger le Vavassour, a member of a leading Yorkshire family, fell ill. His wife and other friends sent for Master Otto, of Germany, a man of note as a doctor, promising him one mark if he would visit the patient, and six marks more if he would undertake the treatment. The doctor went, saw, and conquered. Various medicines and healing drinks compounded by him in the shop of an apothecary of York were administered with good effect. Then came a hitch. When the patient was convalescent, Otto put him on so strict a diet that he grew restive, and his wife gave him various forbidden foods. Otto, finding his orders disobeyed, threw up the case. The sequel shows that mediaeval patients who wished to cheat their doctors showed as much ingenuity in their pleas as is sometimes displayed in modern times. The question submitted to the court was whether the physician, having left his patient before he was fully cured, had shown neglect, and was disentitled to his fees. With a judgment more subtle than might have been expected from a thirteenth century jury, the verdict was that Otto had ordered the diet for the patient's good, and not, as was pleaded, with the object of keeping him weak and so increasing his bill for attendance; they also found that the food given in disobedience of his orders, as a matter of fact, did the patient good. The judges were puzzled and reserved their decision. It would

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have been interesting to know how the case was decided. In another case, which occurred about the middle of the fifteenth century, Eryk de Vedica, one of the brethren of the Grey Friars of London, and a physician of reputation, was sent for by Alice, wife of William Stede, a vintner. When Eryk understood her "grete age and Jubertous Sickness," he was with difficulty persuaded to undertake the treatment. After five weeks attendance he "had soo doon hys parte vnto her that she thought herself wele amended in her body, she cowde hym grete thancke, and gave hym 20s. for his labour." Then the husband sued Eryk for taking the money, and the friar had no defence, as "the common law supposeth every receiving of the husband's goods or money by the hands of his wife without his license or command to be a wrongful taking away of the same from him." The case was taken to the Court of Chancery. Here again one would like to know how it was decided. But the case as it stands suffices to show the eternal meanness of unregenerate man in regard to the payment of medical fees.—Brit. Med. Jour.

Medical Research habitually strives to arrive at something beyond abstract truth. It seeks to promote public and private safety and happiness and the material welfare of society. Its devotees have in mind the discovery of means of remedying misery or warding off calamity; and they know that whatever contributes to health and longevity in any community or nation contributes to its industrial prosperity; so that they are justified in hoping for results from their work which will promote human welfare.—C. W. Eliot.

"A Welcome Annual Caller," "Cannot do without it," "Don't forget me," "Indispensable to the general practitioner," are only a few of the comments Treat & Company have received from those renewing their subscriptions to the 1914 International Medical Annual, which is now in active preparation and will be published during April.

In no other work of its size at such a moderate cost may be found so much valuable material in a form ready for assimilation. The average practitioner cannot find time to do all the reading he would like to, and yet it is a fact that most of the recent advances in medicine and surgery first appear in medical journals and sometimes never elsewhere. The Annual gives in concise form a review of all these journals and at a price that is next to nothing in comparison with what would be the original cost of the journals, not to mention the time saved.

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Modern Aspects of Meningococcus Meningitis.—There is probably no other disease that more strikingly illustrates the happy results following the co-operation of clinical observation and laboratory research than does epidemic cerebrospinal meningitis. According to Levy, "in no disease are we presented with such favorable conditions for the study of the action of a therapeutic agent on the causative organism and the local inflammatory changes produced by it as in meningococcus meningitis. The treatment takes place under ideal experimental conditions." This quotation is cited in a monograph which has been written by Heiman and Feldstein, of New York. The recent epidemics that prevailed in this city, and the hopes aroused by the introduction of a specific serum in its treatment, have stimulated the study of the many phases of meningococcus meningitis and developed a precision in its management and a special technique in the administration of the curative serum. The chronological arrangement of the bibliographical references indicates clearly the historical advances that have been made in the study of every phase of meningococcus meningitis.

As regards the epidemiology of this disease, the authors point out the irregularity of its progression and diffusion in any given community and the absence of any definite cycle in its recurrence. The relation of healthy carriers to the mode of dissemination of the disease has been carefully studied. Flügge estimated that the number of carriers is ten to twenty times as great as the number of meningitis cases developing during the same period, but recent observations have shown that there are no carriers when no epidemic prevails, or among those who are not exposed to infection. As regards the mode of transmission of the disease there is considerable evidence in support of the view that the infection is carried by droplets from the respiratory tract of infected individuals. Though it has been suggested that the nasopharynx is the portal of entry of this infection, there is no experimental evidence to support this view. Heiman and Feldstein review the data

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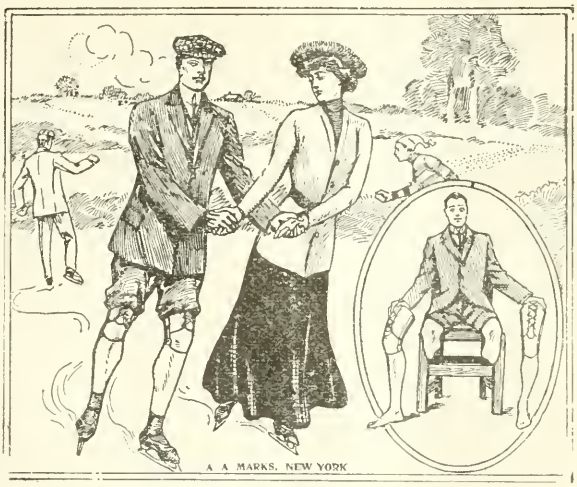

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which, although not conclusive, indicate that in meningococcus meningitis there is a primary invasion of the blood and a secondary invasion of the meninges.

The occurrence of meningococcus meningitis in young infants is not as rare as was at one time supposed. Hyperesthesia, rigidity of the neck, and buiging anterior fontanelle are the three most important symptoms of the fully developed disease at this period of life. The Macewen sign is of value only after the anterior fontanelle is closed, while the Kernig and Babinsky signs are of scant diagnostic value in infants under two years of age. The posterior basic meningitis of infants is now established as a definite type of meningococcus meningitis. Pronounced retraction of the head and progressive emaciation are two of the most prominent symptoms.—Med. Record.

CREMATION.—Price Collier, who died on the Island of Funen, desired his body to be cremated and this was done in Copenhagen. Cremation of the bodies of those who have died is preferable to burial. Emerson, in the diary of his European trip, noted that the French have engraven on the tombstones of their dead, "Here Lies——"; our American custom, "Here Lies the Body of——," is better, being more consonant with the ever impressive "there is a natural body and there is a spiritual body," in the service for the dead. In considering the comparative merits of cremation and burial the beautiful Pauline sentiment just quoted should go far to remove pious prejudice to incineration. And is not, indeed, material life, from the cradle to the grave, but a slow oxidation, a continuous process of cremation? There is still a vestige of the theological view that the material body should remain whole until the last trump, that it may not appear otherwise in the presence of its Maker. But it is inconceivable this could be so of any body that has not been more than several decades in the grave. Yorick's skull becomes hopelessly intermingled with the spine of an erstwhile neighbor, the thigh bone of another. The gruesome idea need be no further pursued. On the other hand, the ashes of the dead could be perpetuated so long as any memory of the life representing it would endure; whilst the spiritual body may be conceived to remain whole perpetually. Will not then the reverent, or taking thought conclude the columbarium to be preferable to the grave? Cremation obtained among many ancient peoples. Especially did the Greek poets find spiritual grandeur in the concept of the soul arising from the ashes of the dead (the natural body) into the empyrean, to dwell thenceforth with the stars. Cremation was indeed an honor denied the bodies of such as had been suicides, those who had been struck by lightning, and others deemed unworthy. Should religious objection to cremation be removed there would remain that of the facility it is assumed to afford murderers and other criminals for the concealment of their crimes. But adequate safeguards can be—indeed, are—legally established. In England no one may be cremated until two independent medical certificates have been given. In the event of doubt ample provision is made for post-mortem examinations. Thus there can remain no other reason why cremation should be preferred to burial; whilst there are peculiar objections, besides those mentioned, to burial—a slow process, most repugnant to the

imagination, and inspiring, as it certainly did under the asceticism of the Middle Ages, much occasionless horror of death. How dangerous burial is to the living, especially in large cities, and where graveyards are contiguous to habitations, all health authorities are fully aware. If cremation should become customary—there are now many crematories in civilization—only the speculator in cemeteries need take umbrage: for there is big money in cemeteries; probably nothing better going with the added likelihood of being able to evade taxes. (This is not, of course, to reprehend many noble institutions.) —Dietetic & Hyg. Gazette.

Blood-Pressure in Pregnancy.—The one point which does not seem to have been brought out fully in the data as regards blood-pressure and the use of the sphygmomanometer, according to F. A. Faught, of Philadelphia, is the relative danger of the high pressure of varying origin which may occur during pregnancy. We find women who during the course of pregnancy show a sustained high pressure with transitory or competent phenomena and at no time even mild toxemia symptoms. These, he says, should be separated from the cases in which the familiar signs of toxemia appear, and should not be looked on as subjects for surgical interference on account of the sphygmomanometric findings. In the toxemia findings the gradually rising pressure, the head pains, and the diminished quantity of urine, with increasing amount of casts and blood-cells and albumin, point to an acute, progressive condition, but in the cases above referred to the elevated pressure may continue, while the urine keeps large in volume and of low specific gravity without albumin or with only minute quantities or entire absence of formed pathologic elements. A history showing a previous kidney trouble may account for the continued high pressure and may aid in the diagnosis. He gives an account of two cases illustrating these points. In each of these the patient had had nephritic symptoms which had been treated previously; one of them in a previous pregnancy occurring only a few months before and requiring the induction of labor. The toxemia did not reappear in the following one, though the little time elapsing between the two pregnancies does not permit of much recuperation.—Jour. A. M. A., Feb. 14, 1914.

One Way of Boosting Business.

Barber—Poor Jim has been sent to a lunatic asylum.

Victim (in chair)—Who's Jim?

"Jim is my twin brother, sir. Jim has long been broodin' over the hard times, an' I suppose he finally got crazy."

"Is that so?"

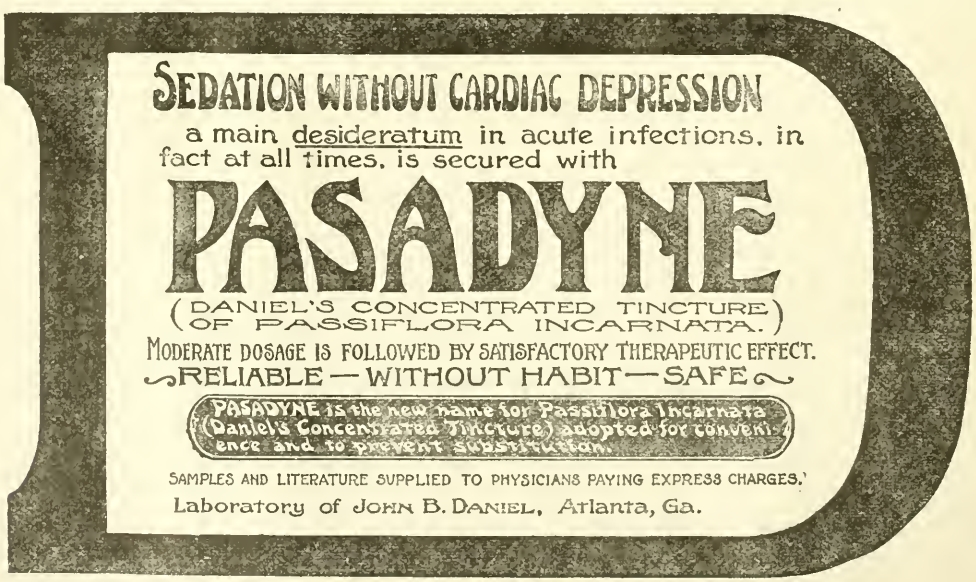
"Yes, he and me has worked side by side for years, and we were so alike we couldn't tell each other apart. We both brooded a great deal, too. No money in this business now."

"What's the reason?"

"Prices too low. Unless a customer takes a shampoo it doesn't pay to shave or hair-cut. Poor Jim, I caught him trying to cut a customer's throat because he refused a shampoo, so I had to have the poor fellow locked up. Makes me sad. Sometimes I feel sorry I didn't let him slash all he wanted to. It might have saved his reason. Shampoo, sir?"

"Yes."—Milwaukee Journal.

Hodgkin's Disease.—Referring to their former note in which they describe an organism cultivated from cases of Hodgkin's disease and producing similar symptoms in monkeys, C. H. Bunting, Madison, Wis., and J. L. Yates, Milwaukee, report further experiments confirming their former results. The virulence of the organism to the monkey is shown to be increased even to the point of producing death in the animal after a relatively acute illness. The histologic findings leave no question as to the relation of the lesion to that of human Hodgkin's disease of the same duration. The difficulty seems to be to secure infection and at the same time to avoid such virulence as would produce extensive necrosis, softening and even suppuration. The working space between these two limits, they say, seems very narrow. While such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extensive necroses and extensive infiltration may seem unlike the ordinary picture of Hodgkin's disease in man, a recent clinical case has shown that such may happen. The authors give a full account of their experiments and say: "Thus, since our experiments demonstrate that the diphtheroid organism is pathogenic for the monkey, that it produces a progressive enlargement of the lymph-nodes, with lesions similar to those of Hodgkin's disease in man, and further that the blood changes in the monkey are similar to those in man, we feel fully assured of the etiologic relationship of the diphtheroid organism (*Bacillus hodgkini*) to Hodgkin's disease."—Jour. A. M. A., Feb. 14, 1914.

A New Method for Preserving Eggs.—The Indo-Chinese have such a good method of preserving the eggs of their hens without any special precautions or cold storage-packing that they do not deteriorate during long voyages. This result, says the London Standard, is obtained by covering the eggs with a layer of paste made with water, sea salt, and vegetable ashes. The eggs are covered over regularly with a layer of half a centimetre or a centimetre thick, and are then put to dry. After having been completely dried, the eggs are simply piled up in a dry place, and they will keep in good condition from one year to another. When they are to be used they are placed in water. The saline covering is dissolved and the egg is ready to be consumed. But owing to certain osmotic exchanges which take place through the porous covering formed by the shell, the eggs thus preserved are extremely salt. Not only is the sea salt diffused in them, but the alkaline carbonates contained in the vegetable cinders also add to its action. It is, in fact, this which ensures the preservation of the eggs for such a long time. And it is indispensable, as is done by Annamites, to use the eggs thus prepared as a kind of condiment which, when mixed with a large proportion of rice, serves both as a sauce and seasoning.—Exchange.

Finger Print Detection by Chemical Means.—The common method of making finger prints clearly visible is to sprinkle talcum powder, or aluminum powder, or a preparation of chalk and mercury over the suspected spot, and then brush the spot slightly with a soft camel's hair brush, when the lines of the finger tip show up in white. The writer has recently discovered another way to secure these impressions in black or brown-black, by chemical means. If a finger print is made upon a piece of hard-surfaced paper, or an impression of the thumb or both, a very fine powder of dried lead acetate may be scattered over the places where these impressions have been made and then the paper should be tapped so as to free the surface of the superfluous powder, after which the spot should be submitted to the fumes of ammonium sulphide. The markings will then develop immediately into bold clear lines of a brown-black color, due to the formation of lead sulphide.

If finely powdered dry silver chloride be used instead of lead acetate the surplus powder being removed in the same way by tapping the paper, it will be found that on exposing the paper to the action of light (sunlight, if possible) the finger prints will develop perfectly. Of course, from these developed impressions a negative may be made and prints made therefrom, either by direct printing, or by development.

It has been found by testing that if the paper employed for this class of work is coated with plain collodion so as to make it non-absorbent the impressions become very brilliant, and can be fixed by floating the paper back down upon a mixture of sulphuric ether and alcohol in equal parts, the penetration of which softens the collodion surface, causing the sulphide of lead, or reduced silver chloride to adhere. A finger print upon a glass tumbler, a glass pane, or upon office brass work can be brought out distinctly in black by placing a piece of white paper in the tumbler in cylinder form. A negative can be readily made from the impression. Lead acetate appears to give blacker impressions with the sulphide of ammonium.

When Kocher's Method Fails to reduce a recent dislocation of the shoulder, it is usually because the surgeon has proceeded too rapidly. Deliberately is the only way to work quickly.—Amer. Jour. Surg.

Hematemesis Control.—Two interesting cases are reported by W. Hersey Thomas, of Philadelphia, from the surgical service of Dr. W. L. Rodman. The first was a case of abscess of the abdominal wall containing a fish-bone which had ulcerated through some part of the gastro-intestinal tract, it is supposed, the stomach. One end of the bone seemed to be loosely embedded in the substance of the rectus and the abscess cavity was chiefly below this. It was opened by a vertical incision three inches long, scrubbed gently with gauze and irrigated with hot normal saline solution. The peritoneal cavity was not opened and recovery was uneventful. The second was of postoperative hematemesis following the operation of gastroplication and a posterior jejunostomy in a ptosed and dilated stomach. During the entire operation hemostasis was perfect and nothing occurred to explain the later vomiting of blood. About two and a half hour after his return to the ward the hematemesis began, and during the next two or three hours the patient lost altogether 36 ounces of blood in this way. The chief treatment given was irrigation of the stomach with hot saline solution in small quantities at a time to avoid dilatation of the viscus until four quarts altogether had been used. Hot rectal enemas had been first given, but did not altogether stop the bleeding. Tripier of Lyons first advised the use of hot rectal enemas in hematemesis, but direct gastric irrigation was, Thomas believes, first employed by Dr. W. L. Rodman in 1902. It was successful after Tripier's and other methods had failed and he has employed it in a dozen cases of gastric hemorrhage since with brilliant success. The case here reported is an additional evidence of the value of the method.—Jour. A. M. A., Jan. 31, 1914.

The Unrest of Acute Infections.—It frequently happens that one of the most annoying symptoms of an acute infection is a state of marked restlessness. An agent of particular utility on this condition is Bromidia which, although administered in small dosage, may be relied upon to quiet the wrought-up nervous centers and secure for the harassed patient the rest he so obviously needs. (Battle & Co., St. Louis, Mo.)

THE RELIEF OF HEADACHES.

One of the reasons that make pasadyne particularly suitable for use in headaches and neuralgias is its freedom from danger. Not only this, but, furthermore its employment does not subject the patient to the jeopardy of drug addiction. Pasadyne is merely a distinctive name for the most potent concentrated tincture of passiflora incarnata at the profession's command. Use it in headache and neuralgia and note its effect. A sample bottle may be had by addressing the laboratory of John B. Deniel, Atlanta, Ga.

ULTRA-RIGID ASEPSIS and minimization of manipulation are the first great essentials in the open treatment of fractures. If these cannot be provided by the environment of the surgeon and by his experience, don't operate.—Amer Jour. Surg.

THE GREAT PRACTICAL ADVANCE IN SEROTHERAPY AND IMMUNIZATION BY MEANS OF SEROBACTERINS. —Serobacterins are sensitized bacterial vaccines or suspensions of killed sensitized bacteria. In the language of the laboratory, they are produced by saturating bacteria with the specific antibodies found in the serum of an immunized animal, removing the excess of serum by centrifuging and suspending the bacteria in a saline solution. According to the trustworthy reports of bacteriologists and clinicians, they are destined in great measure to supplant other means of immunizing against and treatment of many infectious diseases.

The method of sensitizing is, in brief, the treatment of killed bacteria with specific immune serum whereby the bacteria unite with the immune bodies present in the serum, so that upon injection the combination is ready for immediate attack by the "complement" in the patient's blood.

There is thus secured a great gain of time over the older methods of bacterial therapy, and whether in prevention or treatment this immediacy is of the utmost value. In a few days, for instance, by typho-serobacterin, the practitioner may now secure for his patient immunity against typhoid as formerly in nearly a month with the old typhoid vaccine.

Other advantages are that there is no local irritation at site of injection and little or no lassitude or sickness. More important, still, is the fact that there is no negative phase. The size of the doses may also be greatly increased, even quadrupled, thus assuring rapidity of production and strength of immunity.

Of interest in this connection are the laboratory results of Theobald Smith and the work of Von Behring in combining diphtheria toxin and antitoxin for immunization against diphtheria. By making mixtures containing varying amounts of toxin and antitoxin they were able to secure any degree of immunity—from a short, passive immunity due to the serum, to an active immunity of long duration, resulting from the action of the toxin.

To the foregoing advantages of the uses of serobacterins it may be added that in very late stages of the disease, when the bacterial vaccines and even serum treatment is ineffective, successful results are sometimes obtained and life is saved.

Besredka, of the Pasteur Institute, authoritatively summarizes the matter by saying:

"Whatever the nature of the virus, whether the microbe of plague, dysentery, cholera or typhoid fever, or whether the virus of rabies or the toxin of diphtheria, whether the microbes are killed or living, sensitization confers upon them properties which convert them into vaccines of the first order, possessing an action which is sure, rapid, inoffensive and durable."

The results of the clinical use of serobacterins in actual practice give, of course, the final and convincing test. Of such reports one notices that of Gordon, on the successful use of streptoserobacterin (sensitized streptococcus vaccine) in erysipelas, emphasizing the fact that when the treatment did no good it did not do the slightest harm; that prophylactically in the face of epidemics it should have a great future; that in hospitals the resistance of the patients may be raised to bacillus coli, streptococcus pyogenes, or the pneumococcus before operations on the alimentary tract or other infected area; for preventing secondary infections and possibly in cases of difficult labor. He says that in cases already infected the evidence shows that in a proportion of instances it is possible by this method to promote materially the patient's recovery. "By administering a sensitized vaccine to these patients, we appear to bring into action available reserves in that complex and still incompletely defined entity, the patient's specific resistance."

As to the dosage, Gordon, in erysipelas, gave as the first dose 500 million; 24 hours later the second dose was 1,000 million; the third, in 24 hours, was 2,000 million.

Broughton-Alcock found that in acute and chronic gonorrheal urethritis the injections were of little value, but that good results were almost invariable in gonorrheal orchitis, epididymitis, arthritis and periarthritis, tenosynovitis, acne, furunculosis, impetigo, seborrheic eczema.

Boinet found that the good results in typhoid fever were in accordance with its use nearer the beginning of the infection, diminishing the gravity and shortening the duration of the disease.

In gonorrhea Cruveilhier found that in all cases the duration of the disease was sensibly modified; in acute gonorrheal rheumatism he reports a number of cures. In chronic gonorrheal rheumatism and metritis favorable results are reported.

Speaking generally, serobacterins give active immunity within 24 hours after the first injection, with marked improvement in the patient's condition. They produce no opsonic or clinical negative phase—and, therefore, will do away with this cause of solicitude on the part of physicians using the ordinary bacterial vaccines in the past.

To insure that the serobacterin is properly sensitized careful complement fixation tests are carried out to ascertain the extent of antibody absorption by the bacteria. As a further safeguard guinea pigs are injected and the action of the serobacterin is followed by means of a series of tests made with the blood serum of the treated animal.

Great care is advisable in the selection of a sensitized vaccine, or serobacterin—the product only of that manufacturer should be chosen of the highest professional character.

A complete review of the Literature on Serobacterins appears in the Mulford Digest for December, and we suggest that those who have not received a copy of this issue request one, to be read and kept on file for future reference.—(H. K. Mulford, Philadelphia.)

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THE THERAPY OF ACUTE LOBAR PNEUMONIA

By Carroll Chase, M.D., of Brooklyn, N. Y.

IF you met a young or middle aged man on the street, in perfect health, real as well as apparent, and heard a week later that he was dead, in all probability he either met a violent death by accident or died of acute lobar pneumonia. It is the one acute disease that is a common cause of death among young and healthy adults.

The disease itself is limited, and according to our knowledge at the present time the best we can do for the patient's welfare is to meet symptoms as they arise and help nature to tide him over the crisis. It should be emphasized that the minimum amount of medicine necessary to meet the indications is the proper amount. Undoubtedly many cases would recover if they were put in the fresh air and fed, being given no medicine at all.

Fresh air is essential. Unless the weather be too severe the patient is best placed actually out of doors. If this cannot be done place him in a room with all the windows wide open and put the head of the bed by one of the windows. Good nursing is also essential. Only a nurse who is capable of watching and interpreting the pulse and other conditions should be employed, as collapse needs quick recognition and quicker treatment.

Be careful that there is no heavy weight of bedclothes on the chest. The laity seem to fear that the patient will "catch more cold" and if not otherwise instructed will close the windows and bundle the patient in heavy bed clothing.

There is no specific treatment for pneumonia although the profession is waiting impatiently for a corrective and prophylactic serum. To be sure there are various serums and vaccines already on the market but they do not as yet command the confidence of the profession at large. Perhaps the fact that the infection may often be a mixed one makes the problem of serum therapy more difficult.

Possibly the one drug that has had the best reputation for its supposed direct action in the pneumonic process is creosote carbonate. In certain parts of this country it has been widely used and many careful observers praise it highly. It may be given in 10 m. doses every two hours either in capsules or in a mixture such as the following:

Creosot. Carbonatis	f. ℥ss
Pulv. Acaciæ	℥iii
Syr. Prun. Virg.	f. ℥i
Elix. Simplicis	ad. f. ℥iii

M. Sig.: Teaspoonful every two hours.

The addition of the powdered acacia makes an excellent mixture and few object to the taste. Some claim that any beneficial action is due to its antifermentative intestinal action, and others, because of the fact that a certain amount of it is excreted by the bronchial mucous membrane, claim it has some effect on the affected lung.

My personal experience with creosote carbonate in cases in private practice has been such as to lead me to value it rather highly; but it is difficult to say with surety that the happy results were due to this remedy alone.

Another group of physicians believe that

the one indicated remedy for any possible effect on the lung condition is one of the calcium salts. They believe that ten grains of calcium chloride every three hours will provide the body with an element much needed. The tremendous number of new leucocytes need calcium for food and the pneumococci also require calcium for their development and will take it from whatever source is at hand; to the detriment of the body if not furnished.

Just a word about the diet. Nutrition must be maintained to help the system overcome the toxic effect of the pneumococci and other pathogenic organisms. And it must be remembered that a large amount of albuminous material has been withdrawn from the system by the consolidation of one or more lobes of the lung. That the diet should be concentrated and easily digested goes without saying. But further than this it should not readily putrify in the intestinal tract. Fresh whole milk soured by the addition of a pure culture of the lactic acid bacillus—easily obtained in tablet form—is a model basis for such a diet. With the addition of beef juice (not beef tea) cereals, and possibly unfermented grape juice, a thoroughly satisfactory diet may be arranged. If desired one or two eggs may be allowed a day, either poached or added to the milk.

As the treatment is so largely symptomatic the most prominent symptoms may perhaps best be discussed one by one.

The Heart. The commonest cause of death in pneumonia, is heart failure, and the great majority of cases in which the heart itself does not give out recover. Physicians are, perhaps, equally divided as to giving direct stimulation from the beginning, or waiting until the pulse or heart sounds indicate a weakening cardiac action.

The theory of the former is that it is better to anticipate the heart weakness and if possible to prevent it by steady stimulation. The other theory is, that heart stimulants will have a more decided action if the cardiac muscle is not already under their effect. The first mentioned seems to me the more rational. If one heart stimulant loses its effect through continued use there is always another to which we may turn.

The two old standbys as heart stimulants are alcohol and strychnine. The former may be added to the milk, which is usually given every three hours. To begin with a half ounce of whiskey may be added to each glass. If the patient is accustomed to the daily use of spirits he will need his usual daily consumption with an additional amount—perhaps double or triple his accustomed quantity when the disease is at its height. It has been my custom to start with strychnine nitrate 1-60 grn. every four hours for an adult, as soon as consolidation is discovered. This can be increased to 1-30 grn. every three hours as indicated. Strychnine has one great advantage over most other cardiac stimulants. It is a powerful respiratory stimulant and if anyone wishes to get an idea of how exhausting is breathing at forty to sixty times a minute, let him breathe at that rate for two or three moments. This will show how necessary is a stimulant to respiration.

Other heart stimulants may be added to the whiskey and strychnine or may, if wished supersede them. Adrenalin 10 to 15m. of a 1 to 1000 solution is a powerful stimulant to the heart, but its effects last but a brief time and the dose must be repeated at least every two hours. The newer pituitrin, in the same dose, has an action on the circulation very like adrenalin with the advantage that the effect lasts much longer.

Digitalis, best in the form of a reliable digitalin, such as Merck's, as this is not irritating to the stomach as are many of the liquid preparations of whole digitalis, is particularly indicated in cases of very rapid heart action or when the blood pressure is low, as its action is to reduce the pulse rate and increase the pressure.

Caffeine in doses of ½ to 3 grains. Strophanthin (Merck's) 1-100 grn. and sparteine in 1 to 2 grain doses (this is a much larger dose than most text books recommend but is necessary to get the full effect of the remedy) are perhaps next most useful in the order named. Two more heart stimulants must be mentioned. Nitroglycerin 1-50 grn. hypodermatically may be used for very sudden collapse as its action is practically instantaneous. The other is a sterile saturated solution of camphor in oil 15 m. being given only by the hypodermic method every two or three hours as required. This is a most powerful cardiac stimulant and I think will sometimes act when other heart stimulants have lost their effect. Opium as a heart stimulant will be mentioned later.

Because the right side of the heart—with much thinner walls than the left side—has to pump blood against the consolidated lung structure it usually shows embarrassed action before the left side. Naturally, the pulse is not a good indicator of the condition of the right heart, but watching the color of the patient affords a fair method of judging it. Just as soon as the right heart weakens, blood accumulates in the

venous side of the circulation and the patient begins to show cyanosis. The same heart stimulants have to be used for right heart failure as for left, but fortunately in venesection we have a method of relieving the overloaded venous circulation. It must be done heroically if necessary, for with marked cyanosis it is about the only hope. Fluid may be supplied to make up the loss by enemata, if water by mouth is not readily absorbed.

Fever. The fever in acute lobar pneumonia needs no treatment unless it reaches a dangerous height, 104°, or if the patient is in good shape 105° may be let alone. If these marks are exceeded cool sponging with alcohol and water is usually sufficient. For extremely high temperature a full bath at a temperature of 95° may be used. At the outset of the disease if a robust patient has a full bounding pulse and much headache a few moderate doses of acetphenetidin may be given. Except for this the use of any coal tar antipyretic is probably unwise. Slight fever lasting well into convalescence means a complication of some sort, and the possibility of the development of tuberculosis must be remembered.

Headache, which is sometimes very severe during the first forty-eight hours, may call for a few doses of acetphenetidin as was mentioned above, and to this may be added Ext. Cannabis Indica ¼ grn. to each dose. Cold applications to the head may be grateful. Very severe persistent headache after the first few hours may mean meningeal involvement.

The Cough, always present in pneumonia, may or may not require medicine. In the early stages the expectoration is usually scanty and unless the coughing is excessive it may be disregarded. If painful and persistent enough to keep the patient awake codeine phosphate ¼ grn. or dionin 1-12 to ⅛ grn. every two or three hours will lessen the frequency of the coughing spells. Or if another drug than an opiate is preferred, sodium bromide or bromural with two or three grains of chloral hydrate will answer much the same purpose.

In the later stages of the disease when the consolidated lung area is clearing up and the sputum is large in amount an expectorant may assist nature to make the secretion free and the coughing easy. For this purpose I have much faith in a freshly prepared solution of pure ammonium iodide, 10 grn. in water of syrup every three or four hours for an adult. This, to me, has seemed to act far better than the more commonly used ammonium chloride or carbonate. A small amount of opiate may be added to this if desired; codeine or dionin being perhaps the best.

The bowels need not be disturbed if acting normally. Usually it is best to empty them thoroughly at the beginning of the illness. Nothing equals castor oil in efficiency but some patients cannot take it without nausea or vomiting even if the taste is covered. In these cases phenolphthalein grn. V., best followed at once by a little fruit juice will act somewhat the same as oil except that the effect is usually not obtained for 12 to 24 hours. This last-mentioned remedy is the best one to use during the course of the disease if a laxative is indicated. Should it be necessary to use a hydragogue cathartic for such a condition as beginning edema of the lungs croton oil 1 to 3 minims is the surest. It must be well diluted.

The pain in the chest—almost always due to a greater or less involvement of the pleura covering the affected lung—frequently requires medication for its relief. If the pleurisy is low down in the chest strapping with adhesive plaster, so as to limit the respiratory motion, is allowable at least for the first day or two of the disease. After the pain has subsided the straps should be removed. Opiates are often necessary in addition, and again codeine ¼ grn. every three hours or dionin ⅛ grn. perhaps act best. They also tend to quiet the cough which aggravates pleuritic pain as nothing else will. Dry heat—a half-filled hot water bag—also has considerable quieting effect over pleuritic pain. Other counter irritation hardly seems indicated.

The respiration is so rapid in acute lobar pneumonia and the lung surface for oxygenating the venous blood is so diminished that the respiratory muscles and nerves need stimulation along with the heart. Oxygen in the form of fresh air, has already been mentioned. In addition to this, pure oxygen gas may be given freely in the later stages. It may be played about the nostrils and mouth for five minutes with ten or fifteen minute intervals when first needed; and later if necessary, may be used continuously. Of the direct stimulants to respiration strychnine is in a class by itself. Because of this, and because of its satisfactory action on the heart, already mentioned, it is almost a necessity in the treatment of pneumonia.

Delirium unless active enough to tire the patient or make it difficult to keep him in bed, may be ignored. I remember one man seemingly perfectly happy, who in his delirium throughout the course of the disease, drove his famous team of trotters hour af-

ter hour. He even had some recollection of it after the fever abated. The bromides, perhaps in the form of bromural, act as well as any drug unless the delirium be very wild. In this case it may be necessary to use hyoscine hypodermatically. This drug is particularly indicated if the pupils be contracted, but had better not be used if they are dilated. In the latter case morphine or powdered opium will act better.

Sleeplessness, again, unless excessive may be disregarded. If the patient is quiet and not restless, lack of sleep need not cause alarm. The fact that absolute quiet and rest will take the place of sleep to a great extent under most any circumstance is too often forgotten, or not realized by both physicians and laymen. Very small doses of chloral hydrate—2 to 5 grn. in water—is an hypnotic of great value. In this dose it cannot depress the circulation. The newer synthetic hypnotics, veronal or the soluble veronal-sodium for example, also given in doses smaller usually recommended —3 to 5 or 8 grn.—will often act satisfactorily and have no unpleasant after effects. If nothing else will act morphine is a last resort that seldom fails.

That *the kidneys* are acting in a satisfactory manner must be determined by watching the amount of urine and by chemical and microscopical tests. Acute nephritis, which may mean prompt death from uremia, must be actively treated by calling on all other methods of elimination. Free diaphoresis by means of hot packs and pilocarpine 1-10 grn. hypodermatically, catharsis by salines or perhaps better by elaterin grn. ⅛, powdered jalap 5 or 10 grn., or if necessary croton oil 1 or 2 m., will sometimes tide a patient over until we can get the kidneys to acting sufficiently well. For the actual kidney inflammation and congestion probably nothing is as efficient as cupping. This must be done in such manner as to bring large amounts of blood to the surface. Two or three cups applied simultaneously on each side of the spine will not be too harsh. Wet cupping (scarifying the skin before applying the cups) is too cruel a proceeding except possibly for desperate cases. Diuretics are very useful. Sparteine in large doses, 1 to 2 grains at a time, caffeine or diuretin (theobromine sodio-salicylate) may be chosen for this purpose.

Meningitis, fortunately a rare complication calls for active treatment, as the condition makes the prognosis most grave. Perhaps the free use of pneumococcus serum offers the best chance for recovery. Symptomatic treatment is also indicated. Large doses of the bromides perhaps best in the form of bromural with the addition of chloral hydrate, will help prevent convulsions and tend to allay the terrific headache and the delirium. Morphia may be needed, though veronal may assist in producing sleep and quietude.

The *condition of the intestinal tract* should be watched to prevent any serious *fermentation* which would add to the gravity of the disease. Daily free bowel passages usually suffice. If not use a diet that does not tend to putrefaction, and give aspirin or styracol which perhaps prove the best remedies.

The cases of acute lobar pneumonia which live to reach the *crisis* face here the greatest danger point of the dreaded disease. The sudden fall in temperature. I have seen it drop ten degree in as many hours, from 107° to 97°—always means a shock to a severe degree and too often, even is fatal. The two prominent indications are to keep the heart acting and to maintain body heat. The latter by applying external heat freely, and the former by the free use of cardiac stimulants. The writer is partial to adrenalin or camphorated oil given hypodermatically. Strychnine, alcohol and digitalis are also useful, and if pallor is marked nitro-glycerin may be combined with one of the stimulants mentioned because it tends to send the blood to the surface of the body. If cyanosis appears, oxygen inhalations should also be used.

The *cough during convalescence* may need treatment. As the consolidated lung structure clears, large quantities of material are coughed up. Ammonium iodide grn. x. every three hours well diluted has given excellent results. With this may be given strontium bromide grn. x. with each dose if the coughing is excessive, or instead of the bromide a small dose of dionin or codeine. In the last stages of the cough good old-fashioned Brown Mixture in half to one dram doses has long been a favorite of mine.

When resolution in pneumonia takes place too slowly, or not at all, the patient must be guarded as well as may be against the greatest danger—the development of tuberculosis. Creosote carbonate 10 m. at a dose in globules or capsules has a double action. It is an intestinal antiseptic of worth and through virtue of its being eliminated to some extent by the bronchial mucous membrane has some effect in helping to sterilize the secretion. It further has expectorant action. It goes without saying that nourishment must be pushed to keep up the patient's body weight and strength. Bitter tonics help the appetite. Nux vomica,

strychnine or brucine are suggested for this purpose. Plenty of fresh air—preferably outdoor air—is vital. If *sepsis* becomes evident the proper vaccine (determined by bacteriological examination of the sputum) is indicated. For the extreme *sweating* give atropine, picrotoxin or agaricin alone or in combination.

During *convalescence* tonics are usually necessary. Quinine and strychnine with some of the ferruginous preparations, such as iron glycerino-phosphate Merck, meet the indication. If the heart is left in a weakened condition moderate use may be made of digitalis or other heart stimulant, as well as entire rest for this organ, or exercise under the supervision of the physician. Unwise exercise may lead to cardiac dilatation with permanent injury to the organ.

An article on pneumonia therapy would hardly be complete without a word regarding the present status of *serums* and *vaccines* in the treatment of the disease. The medical profession will not be satisfied until we have both a prophylactic and curative serum or vaccine, but we fall far short of this desirable condition at present. Pneumococcus vaccines and serums both are on the market, but the concensus of opinion among physicians regarding their usefulness seems to resemble the canny Scotch verdict, "Not proven."

THE TREATMENT OF CONDITIONS EXHIBITING INDICANURIA*

By Gustav Baar, M.D., of Portland, Ore.

Indicanuria signifies the abnormal excretion in the urine of potassium indoxyl sulphate (indican). According to Jaffe, one finds, physiologically, in the twenty-four-hour urine, from 4½ to 19½ mg. of indican. In these quantities this body can hardly be determined by the usual tests. Indican is derived from indol (C_8H_7N); the nucleus of the indol group, tryptophan, is contained in proteids and converted into indol through the agency of putrefactive processes. The indol absorbed from the intestinal tract is not excreted as such; it is first oxidized to indoxyl (C_8H_6NOH) and then combined with sulphuric acid, when it appears in the urine as the potassium or glycuronic acid salt of indoxyl sulphate. Indican has been found not only in the urine, but also in pleuritic exudates, in the fluid of abdominal cysts, and, recently, in the sweat.

While in a large majority of cases indicanuria is due to the absorption of indol from the intestinal tract (*intestinal* indicanuria), it may also be due to the extra-intestinal formation and absorption of indol, e. g., in the fetid bronchitis, cavernous pulmonary tuberculosis, gangrene, retention of a dead fetus, abscess, etc. This latter type has been designated as the septic, or extra-intestinal, type of indicanuria. The existence of such a type must be admitted, and August Hartman, Alexander Kellman and others have availed themselves of the indicanuria in such cases for diagnostic purposes.

The existence of a third type of indicanuria, "metabolic indicanuria," due to some fault in metabolism, we do not acknowledge, because the experiments in which subcutaneous injection of oxalic acid or phloridzin was found to produce indicanuria have not been verified.

Indicanuria is not a disease; it is merely a symptom, as we shall try to prove—a very valuable one, if properly interpreted.

By far the largest number of indicanuria cases belong to the first group, that of intestinal indicanuria. The indoxyl derivatives *per se* are nontoxic; 0.01 Gm. of indol per kilogram of weight of animal must be injected to produce any toxic effect, and such a quantity is never formed within the intestinal tract. But other products of nitrogenous putrefaction which are formed along with indol in the course of intestinal putrefaction are toxic—ptomaines, leucomaines, phenol, cresol and skatol—and, inmuch as we possess no simple method of determining these latter products, we judge what we heretofore thought to indicate the degree of intestinal putrefaction by the more simple method of the indican test. As will be shown later, indicanuria implies increased intestinal putrefaction only in a small number of cases.

Personally, I have employed the Obermeyer test: One test-tubeful of urine is precipitated with a few drops of a 20 per cent. aqueous solution of basic lead acetate solution. Half a test-tubeful of the clear filtrate is gently shaken with an equal amount of the freshly prepared Obermeyer reagent. The latter is obtained by mixing with 50 C.c. of fuming hydrochloric acid, C. P., Merck, 6 drops of tincture of ferric chloride. One C.c. of chloroform is then added and the mixture gently shaken again for two minutes. The chloroform, dissolving the indican, sinks to the bottom of the tube and presents a distinctly blue, even blackish blue, coloration if indican be present in abnormal quantities. Using always a

*Monthly Cyclo., Feb., 1914.

twenty-four-hour urine specimen and the same proportions of chemicals, and taking into account the specific gravity of the urine, we are enabled to get a fair idea of the quantity of indican by the shade of blue obtained.

In the last two decades it has been the habit of innumerable authors to consider indicanuria the expression of gastrointestinal autointoxication, and to explain diseases which in former years had been termed neurasthenia as manifestations of such intoxication. The actual foundations for this entire doctrine of intestinal autointoxication have not risen above the level of an hypothesis, in spite of brilliant speculations in which, especially, the French school has indulged. Realizing, even from my modest knowledge of the history of medicine, that "theories," in spite of their apparently brilliant foundations, have had to be altered quite frequently, or even entirely abandoned, with the progress of science, while "empirical facts" have remained true ever since the time of Hippocrates, I started, seven years ago, by routine examination for indican in every one of my hospital, as well as my ambulant, cases to gather "empirical facts" in this direction. As space and theme do not permit of an enumeration of these facts, I must refer the reader to my monograph on the subject,[1] based on the study of 2,092 cases, with over 40,000 indican tests and over 100 laparotomies corroborating the diagnosis. After convincing myself that neither constipation, hyperchlorhydria, nor diet per se had anything to do with indicanuria, I was enabled to divide my cases into three groups: 1. Cases showing indican constantly in their urine (constant indicanuria). 2. Cases showing indican only temporarily (transitory indicanuria). 3. Cases showing indican only in association with the clinical recurrence of obscure gastrointestinal symptoms, and in which, with the abatement of such symptoms, the indican disappeared (cyclic or recurrent indicanuria); this type is the most frequent one.

1. The cases of constant indicanuria showed either (a) constant progressive organic lesions somewhere in the gastrointestinal tract—tuberculous peritonitis, carcinoma of the cardia, of the pylorius, of the liver, of the colon, stricture of the rectum, diffuse peritonitis, etc.; (b) constant achlorhydria, nervous achlorhydria or pernicious anemia, or (c) the earmarks of a hypoplastic constitution (hypoplasia).

[1] "Die Indicanurie," Urban und Schwarzenberg, Vienna, Austria.

In former repeated examinations of the feces for indol, I ascertained the fact that there is no necessary relation between indicanuria and fecal indol, for we had frequent occasion to convince ourselves that the feces contained excessive indol, while the urine showed no indican, or that the feces contained indol only in moderate amount, while the urine showed excessive indican. This fact proves that it is not alone the quantity of nitrogenous putrefactive substances in the intestinal tract which causes indicanuria, and that there must be some other reason for the entrance of this material into the circulation besides its mere overproduction within the intestinal tract. The experiments of Herter and Wakeman, which proved that the fresh mucosa of the gastrointestinal tract, as well as liver cells, kidney cells, muscle and brain, has the power of forming such a firm combination with indol that it cannot be recovered on distillation, were recalled. This suggested the idea that it must be some lesion of the gastrointestinal mucosa which allows even the normal indol to enter the portal vein and appear in the urine as indican; that as long as the mucosa, which constitutes the first line of defence against the enterotoxins, is in normal condition, one should find no indicanuria, and that as soon as this first line of defence is broken through, or, so to speak, "begins to leak," one should find indicanuria though the feces might contain only very moderate amounts of indol. In a practically experimental manner I proved this in cases of gastroenteroanastomosis, appendectomy, enteroanastomosis, cholecystectomy, cholecystostomy, gastroanastomosis, —all of which showed indican in the urine from the first day of the operation up to the time when it could be assumed that the intestinal wall was healed. In abdominal, and especially in pelvic operations in which adhesions had to be separated or the intestines extensively handled, the mechanical trauma was sufficient to produce indicanuria. Similar operations in which, however, there had been little or no trauma to the bowel wall, did not give rise to it. In other words, every lesion of the gastrointestinal mucosa, of whatever nature, produced indicanuria: Simple lesions of the gastrointestinal mucosa are sufficient to cause absorption of the ever-present indol and subsequent indicanuria. This assumption is corroborated by the numerous reports of other authors who have found indicanuria present in the conditions already mentioned.

The indican excretion in these cases does

not always imply increased nitrogenous putrefaction, for, once the first line of defence is broken, indican will appear in the urine even though only moderate amounts of indol may be present in the intestinal tract; these small quantities are absorbed by a healthy mucous membrane without causing any indicanuria, whereas in the presence of a lesion of the mucous lining they will enter the circulation and cause indicanuria.

While studying the cases showing no hydrochloric acid at all in their stomach-contents—the achlorhydria cases—I found that all, without exception, had a constant indicanuria. As soon, however, as irrigations of the stomach with a 1:100 solution of silver nitrate brought about the temporary reappearance of hydrochloric acid in the gastric juice, the indicanuria disappeared temporarily. These cases were under observation for several years, as our case-report in the monograph already referred to show; none of them ever developed an organic lesion of the gastrointestinal tract. Hence, one could hardly hold any lesion of the mucosa accountable for this type of constant indicanuria; nor could one assume that the absence of hydrochloric acid *per se* would cause indicanuria, as we had proved before that acid had no bactericidal influence beyond the limits of the stomach.

Tentatively, I would like to suggest the following explanation for this type of constant indicanuria: From the experiments of Bayliss and Starling we know that the normal hydrochloric acid of the stomach, as it enters the duodenum, forms secretin from prosecretin, which is contained in the cells of the duodenal mucosa. This secretin, according to Enriquez and Hallion, enters the circulation and stimulates the pancreas to secrete. The pancreatic secretion, in its turn, causes secretion of the succus entericus; this contains enterokinase, originating from the duodenal glands, and erepsin, originating lower down in the intestines; these two ferments, on their part, activate trypsinogen (contained in the pancreatic secretion) to trypsin, whereupon the pancreatic secretion becomes proteolytic. If, then, as in the cases of achlorhydria, there is no hydrochloric acid, there will be no secretin formed in the duodenal mucosa, and, consequently, there will be no pancreatic secretion brought into the intestinal tract and no secretion of succus entericus. In other words, the normal proteolysis is disturbed and the ever-present bacteria have an opportunity to form putrefactive products out of the undigested proteids; hence, one will find indicanuria as an expression of their excessive formation.

Objection might be made to this explanation on the ground that previously I made the statement that there is no necessary relation between intestinal indol and indicanuria. To this I reply that the abnormally functionating intestinal lining of the achlorhydria cases has lost its indol-binding properties, so that the indol formed in the intestines can easily break through this first line of defence and appear as indican in the urine, which it might not have been able to do if the lining had not lost its toxicolytic properties. A normally functionating intestinal mucosa will prevent the absorption of even large quantities of indol, as we had occasion to observe in the cases of excessive fecal indol without simultaneous indicanuria. This theory, moreover, is borne out by the success of the treatment applied in these cases: Stomach lavage with silver nitrate solution (1:1000), hydrochloric acid and pepsin per os (acidolpepsin tablets), and high colonic lavage with a 1 per cent. aqueous ichthyol solution. The cases of nervous achlorhydria gained in strength as well as in weight—in one instance 40 pounds—on this treatment.

In the same group of cases of constant indicanuria belongs also a case of pernicious anemia in a man seventy-two years of age which I mentioned in my paper read before the meeting of the American Medical Association, November 5, 1910, in St. Louis. This patient, who presented the classic microscopic picture of pernicious anemia (megaloblasts, poikilocytosis, 30 per cent. hemoglobin), gained, in the course of six weeks of this treatment with high colonic irrigations of 1 per cent. ichthyol solution, up to 70 per cent. hemoglobin (Sahli); megaloblasts, poikilocytes and indicanuria entirely disappeared. The consensus of opinion as to the etiology of pernicious anemia seems to be pointing to-day toward an atrophic catarrh of the stomach, thus corroborating my claim that achlorhydria is responsible for this class of constant indicanuria cases.

In this group, again, belongs the case of an hyploplastic woman who was under my care for years with the diagnosis of "depressive neurasthenia," until repeated examinations for indican in the urine revealed a constant indicanuria. With the institution of high colonic lavage the whole clinical picture changed, and the woman, who for years had conveyed the impression of a classical case of depressive neurasthenia, showed a most remarkable and complete

change in her disposition within a week. The indican, which I had found constantly during the previous months, has now disappeared from the urine.

Altogether, there were about 32 cases among the 2,092 studied which thus showed no lesion whatever of the gastrointestinal tract, but did show constant indicanuria. In quite a number of these cases high colonic lavage overcame the indicanuria, and with it disappeared the symptoms of so-called "intestinal autointoxication," as Combe and others of the French school especially have described them—pale face, dry skin, cold feet and hands, dizziness, headache, sleeplessness, nervous neuralgia, migrating depression, rheumatic pains, fetor of the breath, acne, seborrhea, furunculosis and urticaria. A few of these cases are reported in detail in my monograph. A considerable number presented the stigmata of hypoplasia described by Bartels: Excessive irritability of the vasomotor system (erythema pudicitiæ, dermographism); excessive flexibility of the metacarpophalangeal joints; large tonsils; high, narrow and hard palate; uvula bifida; heterologous sexual characteristics, manifested, in the case of women, in the masculine type of hair growth, lanugo on the cheeks and upper lip, long hairs in the axilla, hairy upper arms and thighs, extension of the hair on the mons veneris to the linea alba instead of being horizontally limited, perineum hairy, pelvis masculine, lower extremities of masculine length, hypoplastic mammæ, and strongly developed lower jaw; or, in men, shown in the feminine type—scanty hair growth on the face, breast and mons veneris; cabitus valgus, etc.

If these cases show so pronounced a type of hypoplasia, why should we not assume that there exists at the same time a hypoplastic condition of the secretory glands and the mucous lining of the gastrointestinal tract, *i. e.*, an insufficiency of secretion of hydrochloric acid, pancreatic juice, bile and succus entericus? Such an insufficiency must needs produce an insufficient amylo- and proteo- lysis, whereby a considerable portion of the food will enter the colon undigested and here fall a prey to the ever-present putrefactive bacteria. Thus will occur the formation of large quantities of indol, which will easily penetrate the mucous lining, since the latter has lost its toxicolytic properties. The fact, moreover, that this indicanuria, which is constant, can be removed temporarily though not permanently by colonic lavage, supports my theory. I was able to remove the putrefactive products from the colon mechanically, but could not overcome the insufficiency of the digestive secretions, which betrays a constitutional anomaly, viz., hypoplasia.

As to the treatment of these (hypoplastic) constant indicanuria cases, I may add that the radium waters at St. Joachimsthal, Bohemia, containing 600 units of radium (M. E.) per liter, seem to operate beneficially on account of their activating influence upon the ferments of the body as well as because of their bactericidal effects upon Bacillus prodigiosus.

If one considers that these cases constitute only 1½ per cent. of all the cases studied, whereas the diagnosis of neurasthenia is certainly made oftener by the general practitioner than in only 1½ per cent. of all cases coming under his observation, it is evident that the neurasthenia symptom-complex is only occasionally caused by intestinal autointoxication.

In connection with this secretory insuffiency, I wish to call attention to the original and important experiments of Pawlow demonstrating the influence of the psyche upon the quality and quantity of gastric secretion. We need not be surprised, in view of his results, that diseases, such as epilepsy, chorea or nervous (bronchial) asthma, which include in their symptomatology disturbed innervation of the secretory glands, should show indicanuria, and that the removal of this indicanuria by means of high lavage has no influence whatever upon the disease itself. Thus, while indicanuria constitutes one of the most constant symptoms of epilepsy and other neuroses, we cannot attribute to it any etiologic importance.

2. The cases of transitory indicanuria are due either to transitory organic lesions of the gastrointestinal mucosa, as in the temporary indicanuria of measles and other exanthemata, and in acute gastroenteritis, or to transitory secretory insufficiency (psychic). As a rule, they do not require any treatment.

3. The recurrent or cyclic form of indicanuria constitutes the most frequent type. In the course of my studies on hyperchlorhydria the fact became evident to me that all cases exhibiting symptoms of gall-bladder or appendiceal trouble, or of ulcer of the stomach or duodenum, always showed indican in the urine with the recurrence of these symptoms, whereas with their disappearance the indican likewise disappeared from the urine. Having previously found that every lesion of the gastrointestinal mucosa, of whatever nature, produced in-

dicanuria, I utilized this type of cyclic indicanuria for the differential diagnosis of obscure cases that came under my observation with indefinite gastrointestinal symptoms. With due consideration of all other clinical symptoms, I was thus enabled, in many instances, to make a positive diagnosis of a "surgical" disease where the condition had for years been taken for "nervous dyspepsia," "gastritis," "neuralgia," etc. Many such cases were thus diagnosed early and came under the surgeon's care at the earliest possible stage, as may be seen from the histories given in detail in my monograph. Many a case of recurrent surgical gall-bladder trouble—cholelithiasis—could be diagnosed long before the appearance of the typical gall-bladder colic, and operated upon before pancreatitis, pericholecystitis, empyema of the gall-bladder, etc., became established, thus reducing the mortality of the operation. Many a case of chronic ulcer was operated upon early enough to avoid the development of carcinoma upon an ulcer basis. Many a case of chronic appendicitis, moreover, was thus recognized. After the removal of the cause of this type of indicanuria by cholecystostomy, gastroenterostomy, appendectomy, etc., the indicanuria itself disappeared, thus proving the correctness of my assumption.

In conclusion, I wish to point out the practical results of my studies. Instead of merely guessing at the diagnosis in those cases which come under our observation with indefinite gastrointestinal symptoms, we should (1) regularly test the twenty-four-hour urine for indican, for a period of at least two months (one single test has no value), and thus determine the type of indicanuria present; (2) ascertain if there is achlorhydria; (3) institute high colonic lavage. The latter will remove the recurrent type of indicanuria only when the lesion is located in the colon; if the lesion be higher up, it will have no influence whatever. The recurrent indicanuria in these cases is quite often the only positive evidence at hand of gastrointestinal lesions requiring surgical interference.

In cases of mucous colitis, indicanuria will prove of differential diagnostic value in affording a distinction between nervous mucous colitis and the symptomatic variety of this affection, recurrent indicanuria being present where the mucous colitis has been merely a symptom of gall-bladder disease, appendicitis or ulcer, while the true nervous mucous colitis shows no indicanuria.

In cases of diarrhea one is enabled positively to state whether the disease is due to mere nervous hypermotility of the intestines, or to organic lesions, by simply following the indican excretion.

In cases of hyperacidity coexisting recurrent indicanuria points to a reflex hyperacidity caused by surgical lesions, such as ulcer, cholelithiasis and appendicitis, while its absence suggests a merely nervous or toxic, *e. g.,* nicotine) origin of the hyperacidity.

In short, indicanuria *per se* only rarely calls for any treatment, but constitutes, according to its type, a most valuable sign in the diagnosis of various diseases of the gastrointestinal tract.

TREATMENT OF CHANCROIDS*

By J. Walker Moore, M.D., of Philadelphia

Chancroid is a specific, infectious, highly contagious disease caused by the bacillus of Ducrey. It is characterized anatomically by a local inflammation of the genitalia, proceeding to pustular formation and rapid ulceration; clinically, by a punched out ulcer, which has sharply defined and undermined margins, boggy or doughy in consistence, with a grayish sloughing base, discharging a profuse, purulent, foul, and autoinoculable material, pain to a considerable extent, and a tendency to the occurrence of certain complications, notably, bubo, phagedena; and if the lesion is subpreputial, phimosis and gangrene.

The infection is purely local to the parts upon which it develops and to the lymphatic vessels and ganglia in immediate anatomical association with the parts. Chancroid has its origin mainly, though not entirely so, from traumatism during sexual contact, thus accounting for the high proportion of genital lesions. There are a few reported cases of extragenital lesion, but these are rare. At times it is not an easy matter to make a diagnosis clinically between chancroid and other ulcers on the genitalia, particularly chancre. Thanks to our modern laboratory methods the debatable question can be settled within a few hours. The finding of *Spirochaeta pallida* by means of dark field of illumination, or by Giemsa's stain is diagnostic of chancre on the one hand, and the finding of Ducrey's bacillus is diagnostic of chancroid on the other. We should always bear in mind the possibility of the ulcer being due to a mixed infection. Thus it is never safe to excluded syphilis until three of four weeks have elapsed.

*N. Y. Med. Jour., Dec. 6, 1913.

The basis of treatment of a chancroid is something more than treatment of an ordinary ulcer, namely, cleanliness and antisepsis. We are here dealing with a microorganism, whose characteristics are essentially different from the ordinary pus producing bacteria,in that, 1, the epithelial cells are penetrated by the bacillus, which in turn causes coagulation necrosis, with subsequent erosion, possibly leading to phagedena; 2, the lymphatics are eager and do carry the organism to nearby glands, producing a complication (bubo) rather rare to pus organisms; 3, the power of autoinoculation is quite characteristic of the chancroid bacillus, thus the sore is usually multiple, rarely single, and occasionally with relapses. The multiplicity being due to the fact that the pus from the chancroid is acrid and irritating, thus rendering the epidermis softer (Morton), and by friction or otherwise, the epithelial barrier is made vulnerable to the attack of the microorganism. Suffice it to say that an abraded surface in a restricted sense is not essential for the entrance of the destructive foe. Like the pus producing ulcer, however, the chancroidal ulcer is superficial. Thus it would seem, the indications for treatment is to destroy the chancroidal character of the sore, and to transform it into a simple, noninfected ulcer when possible and no contraindications present.

The best means to this end are: Cauterization, cauterization with currettement, fulguration, excision, and radiant heat.

Cauterization.—Nitric acid and carbolic acid are the best caustic solutions. After the part has been rendered painless by local anesthesia, let me insist that a thorough cleansing of the entire penis should be carried out with green soap and water, and then with warm bichloride (one in 1,000), and finally a rinse in sterile water. If the chancroid is superficial, carbolic acid is indicated. Anesthetize with cocaine solution, ten to twenty per cent., and then apply carbolic acid with a glass rod or wooden applicator directly to the ulcer, making sure no part is left untouched. A neutralizing agent, such as alcohol, should be applied after one or two minutes' action. Now, should the chancroid be deeper and more extensive, with a pseudomembranous coating, nitric acid or the actual cautery should be employed. Local anesthesia should be accomplished by the hypodermic injection of eucaine. In case of nitric acid, it is well to protect the surrounding tissue with petrolatum, and neutralize the acid with sodium hydroxide after one or two minutes. The actual cautery is a most efficient agent, and is especially desirable in severe cases. The small point of the Paquelin or galvanic cautery should be used and cauterization carried a little beyond the diseased tissue. The only drawback being that at times it is objectionable to patients, and of course cauterization of large areas means that the patient has to be anesthetized. Pedersen and Marsh, of New York, recommend the procedure used by Peterson, of St. Petersburg, in the early eighties. The procedure is as follows: The lesion is cleansed with water and gauze, cocaine is applied for five or ten minutes, then nitric acid is flooded upon the sore, care being taken to work it well beneath the overhanging edges into all pockets; after the acid is allowed to remain two or three minutes, the lesion is wiped with blotting paper; then with a sharp curette the slough is thoroughly and deeply removed until clean, smooth, healthy looking tissue is reached. They further advised the ulcer to be touched up with ten per cent. silver nitrate, and wet dressings applied. This treatment is founded on sound reasoning, in that the affected area is rendered sterile, and by removing the necrotic tissue, healthy granulations make their appearance early. A rapid recovery is to be expected, as borne out by clinical results.

Excision.—The use of this procedure should be restricted. In the beginning of the chancroid, even if there is doubt about the diagnosis, and if the lesion is limited to the foreskin, excision is an excellent procedure. It should be carried out by thorough cleansing of the parts, a hypodermic injection of eucaine around and beneath the ulcer, and painting the lesion with iodine solution, picking up the diseased area with a pair of mouse tooth forceps, cutting it out with scissors, and closing the wound with suture.

Fulguration.—The high frequency current has gained an important place in the treatment of certain pathological conditions, namely, cancer of the bladder, etc. It has been used and is still in use by a number of enthusiastic workers in the treatment of chancroid. The results are not altogther edifying, but rather condemned by most genitourinary men. It acts through cauterization of the tissue, but has no advantages over the simple caustics. In fact, the degree of cauterization of the tissue is better controlled by the use of the simpler cauterants.

After the chancroidal ulcer has been destroyed, the basis of treatment is cleanliness and antisepsis, namely, cleanse the ulcer with hydrogen dioxide and boric acid solution, Thiersch's solution, or lead water

and alcohol, cover with a guttapercha tissue or paraffin paper, and retain with a bandage. The frequency of the dressings is to be carried out according to indications, usually three times daily.

There are certain contraindications for cauterization that must be adhered to: When the sore is attacked by a high grade of inflammatory edema, prolonged immersion of the involved part in hot water, or in a hot bicarbonate of soda solution or, if you please, the entire body may be immersed in hot water, and the affected part sprayed with hydrogen dioxide and protargol one in 1,000, the dressings being kept constantly wet with the following solution:

Hydrargyri Chloridi Corrosivi	gr. 1/6
Zinci Sulphatis	gr. ix
Acidi Borici	5i
Glycerini	5i
Aquæ	5vi

Misce. Fiat solutio.

Gauze wrung out of a solution of ammonium sulphoichthyolate, one in 1,000, may be used (Martin). This should be applied three or four times daily. If the chancroids are numerous and only a few are exposed, or if treated on the meatus, here conservative treatment is again indicated. Thus, the spots should be sprayed with hydrogen dioxide and protargol, one in 1,000, and a wet dressing of the solution given in the above formula applied. The prepuce may be stretched, and a thin layer of absorbent cotton, moistened with the solution, introduced between it and the glans penis. The patient should change the dressings every time he urinates or oftener. During the reparative stage when healing granulations make their appearance, scarlet red ointment or balsam of Peru, retained by cotton, is valuable. Schaltz recommends basic fuchsin in this stage also. I have purposely omitted the use of dry dressings, the objection being that powders tend to cake and through the retention of secretion bubo is very likely to occur.

Vaccine therapy.—Herbst, Gatewood, Ito, and others have done considerable work along the line of preparing a vaccine for treatment of chancroid. The results have not been gratifying. As yet, they have been unable to make a culture of the bacillus of Ducrey. Nevertheless, Herbst and Gatewood have treated a number of cases with autogeneous vaccine, composed of a bacillus belonging to the pseudodiphtheroid group that they have isolated constantly from the sore, and at times found in pure culture. They report from this treatment alone a trifle less than thirty per cent. of cures.

Phimosis.—When the care of a subpreputial chancroid has been neglected phimosis is a usual sequel. It is best treated by injecting with a flat billed syringe under the foreskin a protargol (one in 1,000) or weak sublimate solution; during the intervals of treatment the foreskin should be retracted is possible, care being taken that the mucous membrane is not torn, and a piece of absorbent cotton, saturated with Thiersch's solution, the solution given in formula, or bichloride solution, put in place. The penis is then wrapped in wet dressings of bichloride, or lead water and alcohol. Now, should the edema subside, thus permitting the foreskin to be retracted with ease, the parts should be cleansed and the ulcer cauterized. If in spite of careful treatment the edema progresses, surgical treatment is indicated—cleanse the penis in the usual manner, and split the prepuce upon the dorsum as far back as within one-quarter inch of the coronary sulcus. The chancroids are exposed and cauterized, as well as the fresh cut wound; then treat as a common ulcer.

Paraphimosis.—This is relieved by cutting the constricting band and cauterizing the chancroids and the fresh cut as well.

Phagedena.—This condition is usually due to the low resistance of the individual attacked, as a result of alcoholism, syphilis, tuberculosis, etc. According to Scholtz, in seventeen cases of phagena that came under his observation, the minority showed weakness, debility, etc., while the rest of them were of good physique and of a robust appearance. He concludes, and rightly so, that the extreme virulence of the streptobacillus is a frequent cause. Here general and local treatment is indicated. Rest in bed, soft nutritous diet, stimulants, and tonics, in the form of iron, quinine, and strychnine are of prime importance. Potassiotartrate of iron, five grains given every three hours, is said to be of great value (Ricord). Opium is given to relieve pain. These cases are often manifestations of late syphilis, hence mercury and the iodides should be given a fair trial. Locally, the actual cautery is essential and every portion of the ulcer should be thoroughly cauterized. If anesthesia is necessary, as is frequently the case, gas or ether should be given. Good results are obtained by hot baths, or sitz baths given four to five times daily, or the patient may be allowed to remain days or weeks at a time in the bath. A powerful therapeutic agent that should be used only in this variety of chancroid is the *x*-ray. Scholtz has achieved excellent results from the use of the *x*-ray treatment,

and recommends the strength of the current to be two milliamperes; distance from the tube, six inches; duration of the treatment, ten minutes; and exposure amounting to a half erythema dose. The therapeutic action that the *x*-ray has in this condition is not definitely known, as the rays are not germicidal. Scholtz suggests the curative value to be due to the peculiar property of the rays to attack all pathological formation and tissue in preference to healthy tissue. Inasmuch then as the pathological tissue is attacked by the rays and is caused to slough away, healthy graulations gain a foothold and the ulcer soon heals.

Radiant heat has a number of advocates. The pioneer of this treatment was August Bier. It was first used in this country by Ruggler, of Rochester. Scholtz advises the treatment to be carried out as follows: A daily exposure of from 10 to 20 minutes, of a fifty candle power incandescent lamp, at a distance of from 6 to 12 inches. He cites a case where the chancroid had resisted all forms of treatment; after ten exposures he states that healthy granulations appeared. After healthy granulations appear in these ulcers balsam of Peru, scarlet red ointment and basic fuchsin are indicated as healing agents. The germicidal value of radiant heat is explained by Scholtz as being due to the action of high temperature upon the bacillus of Ducrey. The bacillus is killed at 122° F., and as I have pointed out in the beginning, that the streptobacillus is found very superficially located in the diseased tissues, the thermic theory appears to be the correct one. However, we must not lose sight of the value of active hyperemia in this treatment, as has been pointed out by Bier himself.

If, then, the virulent organism is attenuated by heat or what not, active hyperemia plays an important rôle in controlling the local condition.

Bubo.—The pathological process begins as a focal necrosis in the centre of the node, and ends in a complete resolution or more likely, if not properly treated, in a breaking down and abscess formation involving the surrounding tissues through direct extension. A single gland is rarely involved, *per se,* usually several, and the stages of suppuration are almost always at different intervals.

The streptobacillus has been found in the tissues of an affected gland before suppuration had taken place by Audrey, and in the periglandular tissues by Krepling. Ricord explains the virulence of a bubo as due to external contamination, and believes that if the incised bubo is well protected from the secretion of the chancroid, the virulent condition would not arise.

Sovinsky has pointed out that the bacillus of Ducrey is carried to the glands and perishes there after giving rise to suppuration. Thus, he asserts, self-destruction explains why the bacillus is not found in the bubo after maturation has taken place. Early or latent virulence in a bubo may be explained then by external contamination, but there are cases on record where the bubo became virulent after the chancroid had healed. If we bear in mind that a bubo is a polyadenitis, and these glands suppurative at different intervals, we may understand how the virulent organism may exist in a recently affected gland before self-destruction has taken place. If the ulcer is present, and we have reason to believe that the bubo has been well protected from external contamination, and latent virulence of the bubo makes its appearance, I believe the lymphatics in this case carry the bacillus to the noninfected bubo and there set up an active process. Thus, I fail to see the efficiency of injecting antiseptic solutions into the glands to prevent suppuration, as recommended by Welduder, Lang, Cordier, and others. Lehner advised puncture, expressing the retained pus, covering the opening with a moist dressing, and changing the dressing frequently. Mosetig, Moorhof, and Lasser advocate the removal of the infected glands if they are deep seated. Total extirpation of the inguinal glands, however plausible it may seem, is to be feared, owing to the fact that permanent edema (elephantiasis) may be the result, as pointed out by Lasser, Virchow, Neisser and others. From Sovinsky's experimental deductions ,and from the pathological process that takes place, I can see where no benefit can be derived in early suppuration of the inguinal glands from the use of small incisions, evacuations of pus, and the injection of iodoform and glycerin into the cavity. If a single gland is affected, the procedure is admirable, but if there is present a polyadenitis, the method is usually an endless procedure.

In nonsuppurating adenitis, rest in bed, cold applications, evaporating lotions, moderate pressure obtained by shot bag, sandbag or by a bandage and compress, as recommended by Kollmann, and revulsion produced by blisters, give the best results. Cumston states that a bubo can be aborted before suppuration appears, if a blister is applied. After suppuration is well established, the best results are obtained by thoroughly cleansing the penis and surrounding parts, protecting the field of operation,

making free incision, evacuating the pus, curetting or dissecting out the partially broken down remains of the glands, and packing with iodoform gauze, renewing the dressing daily.

Episcopal Hospital.

ON THE TREATMENT OF CARBUNCLES, BOILS, STAPHYLOCOCCIC INFECTIONS, AND CERTAIN STREPTOCOCCIC INFECTIONS BY THE INTERNAL ADMINISTRATION OF LARGE DOSES OF DILUTE SULPHURIC ACID B.P.*

By John Reynolds, M.D., Brux., M.R.C.S. Eng., and Russell J. Reynolds, M.B., B.S. Lond., M.R.C.S., Eng.

[For the information of our readers we would point out that the dilute sulphuric acid of the British Pharmacopœia is of 13.65 per cent. strength, whereas that of the United States Pharmacopœia is of 10 per cent. strength. The British preparation is therefore about one-third stronger. —Ed.]

In response to the wish expressed in the concluding paragraph of Mr. F. S. D. Hogg's letter in The Lancet of February 22d, we have pleasure in sending for publication results obtained by the administration of acid. sulp. dil. B. P. in cases of staphylococcic and some streptococcic infections. It must be clearly understood that this article only deals with the clinical side of the subject, as this aspect presented itself to us first. As regards the experimental investigation, we may say that it is now being followed up, and it may be dealt with in a further communication. We have used this remedy in such cases as those set forth below for many years with uniform success. From letters we have received from medical men in different parts of the country it appears that they have experienced the same satisfactory results.

As will be seen, the treatment consists in administering internally dilute sulphuric acid B. P. in 20 or 30-minim doses, each dose diluted with 2 oz. of water, every four hours.

In the case of carbuncle treated by this drug in large doses (small doses are not of the slightest use), changes are observed to take place in the following order. First, within 24 hours the infiltrated area of tissue becomes strictly circumscribed; then the slough is observed to soften; during the next few days pus is freely discharged, and the whole affected area shrinks and healthy granulation tissue forms, filling up the cavity until the part is healed. The cicatrisation takes place in a comparatively short time from the commencement of the treatment, the period varying, of course, with the size of the lesion.

The only external application is a dressing of carbolized vaseline (1 to 20).

Naturally in cases of what would appear to be streptococcic infection, such as those resulting from abrasions, or punctures by bones of high game, or inoculation by decomposing animal matter, the patient showing early symptoms of septicemia, a somewhat different though favorable course obtains; the high temperature is quickly reduced and the pain and swelling and malaise gradually subside, the patient progressing uninterruptedly towards convalescence. Where the lymphatics are inflamed and the glands enlarged and painful these conditions in a few days also disappear.

The following cases are taken from our notes:—

Case 1.—The patient, aged 49 years, while away on a holiday in Wales, developed a very small painful spot on the left side of the back of the neck, just at the posterior edge of the sterno-mastoid, which was thought at the time to be due to a mosquito bite or sting. This spot rapidly increased in size during the succeeding four days until it resulted in a carbuncle. The patient then returned to London by order of the local medical attendant, and came under our care. We at once administered acid. sulph. dil. in 20-minim doses diluted with a wineglassful of water; this was continued every four hours and the carbuncle dressed with carbolized vaseline (1 in 20). No other treatment was used, and in 19 days from the commencement of the treatment the patient was absolutely well.

Case 2.—The patient, aged 29 years, apparently in a healthy condition, accidentally pricked the index finger of the right hand on October 9, 1911, while dressing a rabbit which was seemingly in a perfectly fresh state, and which was afterwards eaten by the family for dinner. On the evening of the same day the finger began to throb and grow painful, and during the night the pain continued and kept the patient awake. All the next day and night it was poulticed. The patient now began to feel ill, and the swelling and pain extended to the elbow. On the 11th, two days after the puncture and just before we took the case in hand, a severe rigor had occurred. On visiting her the temperature was found to be 104.5° F., and the patient seemed very weak and ill; the whole forearm and hand were extremely swollen and painful, red lines marking the course of the lymphatics as far as the elbow, with swollen glands and also some tenderness and swelling in the axilla. We at once administered 20-minim doses of the acid. sulph. dil. B. P. in a wineglassful of water, and the dose was repeated every four hours through that day and the following night. On the morning of the 12th the temperature had fallen to 102° and the pain was much less. The doses were continued with strict regularity every four hours, and on the morning of the 13th the temperature had fallen to 100°, the pain was still less, and there was a considerable diminution of the swelling. This treatment was continued, and on the 14th the temperature

*Lancet, March 15, 1914.

was normal, the swelling and pain had subsided, and only a little stiffness remained, and this also subsided on the 17th, when we left her well. As regards outward application, the whole arm and hand were simply wrapped in cotton-wool and supported in a broad sling.

CASE 3.—The patient, aged 43 years, had pricked the index finger of her right hand while drawing a "high" partridge. Four or five days had elapsed before the case was seen by us, when the whole hand and arm right up to the shoulder was found to be edematous, livid in color, and intensely painful. There was a high temperature —104° F.—and great restlessness and depression. The patient was sent to bed, but could not sleep on account of intense pain. The limb was wrapped in cotton-wool and carefully supported on pillows, and acid. sulph. dil. was given in 30-minim doses every four hours. Within 20 hours or so (by the time the patient was seen next day) the pain began to subside and the temperature to fall, and at the end of the fourth day of treatment the swelling began also to lessen, and the patient continued to improve steadily until at the end of three weeks she was convalescent as far as the arm was concerned, but the treatment was continued in 20-minim doses with a little quinine sulphate (2 grains) for a further week, when the patient was then in her normal state of health.

CASE 4.—The patient, aged 45 years, a short, thick-set, plethoric man, a gross eater accustomed to take plenty of beer and stimulants generally, but who took also plenty of violent outdoor exercise—e. g., sports—came under treatment on May 16th on account of a tense and diffuse red swelling of the left upper lip and left ala of the nose, and extending to the left eye, the lids of which were very swollen and quite closed. He said it was extremely painful, and he attributed it to poisoning by an insect. On examination there were seen to be three small apertures disclosing a hard gray slough, such as one gets in carbuncles. The temperature was high when he was first seen. This patient was at once sent to bed and put on the acid. sulph. dil. treatment (in this case 30 minims in a wineglassful of water every four hours), and after the first 24 hours the spread of the inflammation was arrested and the gray slough in each aperture began to soften down into pus which discharged itself in increasing quantity through the three openings, and the swelling began to subside; the temperature went steadily down, and on June 10th—i. e., in 25 days —the patient was quite well. The only other remedy applied was carbolized vaseline (1 in 20) on lint as a dressing. For at least the first 10 days the patient was only allowed light diet, and as an aperient magnesium sulphate was given in drachm doses in 10 oz. of water fasting.

We have treated in the same way in the past a very large number of similar, as well as of milder, cases—e. g., blind boils, which are aborted and completely disappear. Recurrent crops of boils and pimples in different parts of the body and severe cases of acne have yielded readily. In one case in particular, where the patient developed recurrent crops of boils, the drinking water was found to be taken from a very foul cistern with dead animal and vegetable matter covering the bottom.

This remedy proving so effectual in such classes of cases as we have mentioned, we were naturally led to try its effect on other conditions where pyogenic organisms were responsible for some of the symptoms observed. Cases of bronchiectasis and pulmonary tuberculosis, where there is so often a staphylococcic infection, we have found to be benefited; the sputum becomes less purulent and much less in quantity, and in tuberculous cases the fluctuations of temperature are less.

From the above it seems evident that this remedy has a wide sphere of usefulness, and experiment and observation alone will show in the future how far the many lesions caused by pyogenic organisms can be successfully treated in this way.

SOME SUGGESTIONS RELATING TO THE DIAGNOSIS AND TREATMENT OF COMMON ACUTE EYE DISEASES*

By John M. Wheeler, M.D., of New York
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Acute catarrhal conjunctivitis is commonly known as "pink eye." This condition seldom goes unrecognized either by the physician or the layman, but often through carelessless is allowed to spread from person to person. Fortunately, no trouble often results beyond the distress and inconvenience which the infection occasions those afflicted. In acute catarrhal conjunctivitis the infecting organism is usually either the Koch-Weeks bacillus or the pneumococcus. These two bacteria produce clinical appearances so nearly alike that microscopic examination of the conjunctival secretion is necessary to identify the etiological organism. Perhaps the chief importance in connection with acute conjunctivitis lies in the fact that genuinely serious eye affections such as corneal ulcer, acute iritis and acute glaucoma are often mistaken for this disease by general practitioners.

There are certain reliable diagnostic signs and symptoms in this connection which should be familiar to all physicians. In acute inflammation of the conjunctiva this membrane is red, and particularly that part away from the cornea. This *conjunctival redness* must be distinguished from the so-called circumcorneal redness which immediately surrounds the cornea in acute disease of the iris, ciliary body or cornea. In acute conjunctivitis there is always *mucoid* or *muco purulent secretion*, and usually this appears in abundance. Subjectively

*Med. Times, Feb., 1914.

the patient complains more of smarting and burning than of pain.

Treatment.—This condition is self-limiting, but the course can be shortened materially by treatment. During the first few days of the disease *ice compresses* are valuable in allaying the inflammation, and in relieving the patient of the sensation of heat in the eyes. Instillations of *argyrol 25 per cent.* every two hours are effective in combating the infection, and the excess of argyrol together with the secretion should be wiped away with absorbent cotton dipped in saturated *boric acid solution.* Before the patient goes to sleep the eyes should be annointed with vaseline or albolene to prevent the lids from sticking together. The prognosis is absolutely good.

Gonorrheal Conjunctivitis.—This is met with most often in infants born of mothers afflicted with gonorrheal vaginitis, and is usually recognized promptly by attending physicians through the characteristic and pitiful clinical picture presented by the new born within a few days of birth. But it should be borne in mind that gonorrheal infection of the conjunctiva may occur in persons of any age, and that the disease is even more serious in adults than in babies. Gonococcus infection and no other infection produces a profusion of thick, creamy, purulent conjunctival secretion. The diagnosis should be confirmed by microscopical examination of the pus, which reveals the characteristic intracellular diplococcus, negative to Gram's stain.

Treatment.—Vigorous treatment should be instituted as soon as the diagnosis has been made. Cleansing removal of the pus is most important. This is best accomplished by irrigations with a mild antiseptic solution such as boric acid (3 per cent.). The pus should be removed from the skin and eyelashes by wiping gently with cotton moistened with the solution. The conjunctiva can be irrigated by allowing the boric acid solution to drip into the eye from soaked absorbent cotton or better by flooding the eye by the use of an eye dropper with a smooth tip. This cleansing process must be performed as often as free pus presents itself, every fifteen minutes, night and day, if necessary. Instill argyrol or protargol 25 per cent. every two hours. If only one eye is infected this should be put in the healthy eye as well as in the diseased one for its prophylactic effect; or a watch crystal shield may be sealed over the good eye with adhesive plaster. If the eyelids stick together or if the skin of the lids becomes excoriated, warm vaseline should be applied. After the most acute stage of the disease, when the swelling of the lids has disappeared to a considerable extent, recovery can be hastened by applying 25 per cent. argyrol or 1 per cent. silver nitrate to the folds of the conjunctiva at the top of the upper cul de sac. The cotton swabs used in making the applications should be wound tightly on toothpicks or applicators, and the medication carried well up to the upper fornix and rubbed into the folds of conjunctival tissue.

Too much importance cannot be attached to the necessity of avoiding any injury to the cornea in the treatment of gonorrheal conjunctivitis, as a slight abrasion of the epithelium may result in an ulcer of the cornea and subsequent blindness. If an ulcer should complicate the conjunctival infection hot applications and atropin should be added to the treatment. After the flow of pus has ceased microscopical examination of smears from the conjunctival secretion should be made. Treatment must not be discontinued until repeated examinations fail to show gonococci under the microscope. During the course of the disease the transmission of the infection to others must be most scrupulously guarded against. If uncomplicated by ulceration of the cornea, gonorrheal conjunctivitis ought to be cured without impairment of vision. Corneal ulceration in the course of the disease always results in serious impairment or complete loss of sight.

Phlyctenular Conjunctivitis and Keratitis.—Phlyctenular inflammation of the conjunctiva and cornea presents the characteristic little nodules of lymphoid cells called phlyctenules. It occurs for the most part in children who are badly fed and are too little given to cleanliness and out of door exercise. This condition is sometimes referred to as "eczematous" or "scrofulous" and is usually accompanied by enlarged cervical glands, and eczematous fissures about the ears or nostrils. Photophobia, lachrymation and spasm of the eyelids generally are marked, and cause the child to present a pitiable appearance of distress. The phlyctenules may be in the conjunctiva or in the superficial layers of the cornea, but most often at the corneo-scleral junction. The nodules break down to form little ulcers, and if situated on the cornea give rise to considerable pain, which is often augmented by fissures of the skin at the outer angle of the eyelids.

Treatment.—A mild antiseptic ointment should be applied to the eyes and should be snuffed up the patient's nose two or three times a day. An ointment suitable for this

condition is one made according to this formula:

Hydrarg. Oxidi Flav.....grn. i
Ol. Amygd. Dulc.....gtt. x
Mix well.
Petrolat. Alb. 5iii
Misce.

Healing of the fissures in the skin is hastened by the application of silver nitrate 4 per cent. or the lunar caustic stick. The constitutional care of children afflicted with this disease is important. Cleanliness, fresh air and nourishing diet free from pastry and sweets are essential. Syrup of the iodide of iron and cod liver oil have been found to be beneficial and the results of a careful physical examination may suggest further helpful treatment.

Interstitial Keratitis.—This is an inflammation of the substance of the cornea; that is, an inflammation affecting neither the anterior nor the posterior surface, but the buried layers of the cornea. By the inflammatory process this normally clear structure is rendered opaque, and the acute symptoms of photophobia, lachrymation and intense blepharospasm appear. With very few exceptions, inherited syphilis is responsible for this disease, so that the diagnosis usually is rendered easy by the recognition in a young person of the inflammatory eye symptoms together with characteristic signs of inherited syphilis, such as Hutchinson's teeth, prominent frontal eminences, depression of the bridge of the nose and linear scars on the face near the angles of the mouth. The keratitis usually occurs in both eyes, but not necessarily simultaneously.

Tratment. — Smoked glasses relieve somewhat the sensitiveness to light. The pupil should be kept dilated with atropin sulphate ½ to 1 per cent. throughout the course of the disease unless the annoying symptoms of increased tension should set in. Hot compresses give some relief to the pain and have a favorable influence on the inflammatory process. Annointing the skin of the eyelids with vaseline prevents the hot bathing from parching the skin. Dionin in 2 to 10 per cnt. solution is thought by some to be helpful after the acute symptoms have begun to subside. There is considerable difference of opinion among oculists as to the best constitutional therapeusis in interstitial keratitis. Salvarsan has been disappointing in its results. Mercury and potassium iodide are usually administered, and calomel in 1/10 to ¼ grain doses is the favorite form of mercury. The inflammatory process is self-limiting and usually lasts from one to three months.

Acute Iritis.—It is not exaggeration to say that iritis often goes unrecognized by general practitioners of medicine. It is too often mistaken for conjunctivitis and without good reason, as the two conditions are usually easy to differentiate. In iritis there is increased flow of tears but no muco-purulent or purulent secretion, whereas in acute conjunctivitis there is always excess of muco-pus or pus, usually in such abundance that the eyelids are "glued together" in the morning when the patient awakes. This diagnostic point alone, if possessed by the physician, is sufficient to prevent him from falling into the common error of mistaking the serious condition of iritis for the comparatively innocuous condition of conjunctivitis. Acute iritis when treated for conjunctivitis may lead to serious impairment or loss of vision. Pain in the eye and head, usually worst in the early morning hours, tenderness of the eyeball, change in color of the iris, diminution in size of the pupil and circumcorneal redness accompany acute inflammation of the iris, and do not accompany acute inflammation of the conjunctiva.

Treatment.—Ascertain, if possible, the constitutional condition responsible for the iritis. Syphilis and "rheumatism" are most common causes. If either of these diagnoses can be established, the patient should be put on vigorous anti-syphilitic or anti-rheumatic treatment. Inflammation of the iris does not contra-indicate salvarsan. Free purgation should be instituted whatever the cause of the iritis. Locally, atropin solution should be instilled in sufficient strength and sufficiently often to keep the pupil dilated. Application of compresses as hot as the patient can bear them relieve pain and help in allaying the inflammation. The pain may be severe enough to justify giving morphine or some other analgesic. A favorable course results in termination of the inflammatory process in two to four weeks.

Acute Glaucoma.—This is a most painful and serious disease of the eye occurring more often in women than in men. The pain is often more in the head above the eye than in the eye itself. It usually is intense, and accompanied by nausea and vomiting. Probably acute glaucoma has been diagnosed "headache and gastritis" many times. The increased intra-ocular tension renders the cornea steamy and shuts off the sight; the pupil becomes dilated and fails to contract when condensed light is thrown in the eye; the vessels about the cornea become engorged, giving a violet-red circumcorneal hue, and palpation reveals a hard eye, exceedingly sensitive to manipulation.

Treatment.—A hypodermic injection of morphine (*without atropine*) should be administered to relieve the pain. Eserine sulphate 1 per cent. solution may be instilled every hour until the pupil contracts. Or, failing to accomplish this within a few hours, the physician should call an ophthalmic surgeon to perform an iridectomy at once.

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DILATATION OF THE STOMACH COMPLICATING PULMONARY TUBERCULOSIS: ITS SYMPTOMS, DIAGNOSIS, AND TREATMENT*

By Frank Neall Robinson, M.D., of Monrovia, Cal.

In obtaining a careful history in cases of pulmonary tuberculosis, it seems remarkable how many of the patients suffering from this disease complain of disturbances of digestion, varying in character, which have already existed for some time. The majority have been sufferers in this direction long before a diagnosis of the pulmonary affection had been made. Investigation of these symptoms is of such importance to the welfare of our patients that it behooves us all to examine with especial care the size and location, as well as the motor function, of the stomach in all cases of pulmonary tuberculosis coming under our supervision, and to watch carefully for the development of these symptoms, in those where no deviation is found, during the course of treatment. That dilatation with atony and loss of motility is the commonest variety of gastric disturbance to be met with in cases of pulmonary tuberculosis, those who will search carefully for it can easily convince themselves.

In a series of 265 cases of pulmonary tuberculosis under my care I have found dilatation of the stomach to exist in 223 (85 per cent.); of these 223 cases, 134 (60 per cent.) gave a previous history, extending over several years, of symptoms referrable to the stomach, such as belching and frequently recurring "bilious attacks," with vomiting, palpitation of the heart and headache.

The number of males suffering from the affection was relatively as great as the number of females in whom the diagnosis could be made.

It is my firm belief that dilatation of the stomach plays an important role in the production of many symptoms seen in the tuberculous, and that its existence aggravates many more of the symptoms primarily of a tuberculous nature, by reason of the autointoxication taking place through the fermentation of the sugars and starches, or through the putrefaction of the meat, eggs and milk, and no doubt as a result of both factors, operating simultaneously, in a large majority of cases. These conditions constitute an important agency in the increase in fever, and are also responsible for many of the secondary toxic symptoms, such as loss of appetite, extreme fatigability, nervousness, constipation, the marked matutinal depression complained of by many of these patients, as well as albuminuria, headache, urticaria, and the thick, glutinous sputum occluding the bronchial tubes and provoking sibilant râles and harassing cough accompanied by vomiting. Many additional symptons can easily be proved to depend on gastric dilatation by instituting the proper measures to overcome this condition, when most of the secondary symptoms will be seen to disappear and the remainder to become markedly lessened.

Etiology—The causes of dilatation of the stomach are as numerous as those contributing to the pulmonary lesion. Some of the most important ones may be enumerated as follows: Irregular meals; leaving too short an interval between meals, and eating too much too quickly. But the most important factor, to my mind, is a debility of the muscular wall of the stomach, which forms part of the general muscular debility of these patients. This is accompanied by degenerative changes in the gastric musculature, the result of fatty degeneration consecutive to inflammatory affections of the mucous membrane, these in turn being due to intemperance, alcoholic intoxication and also to infectious diseases.

Symptoms.—The symptoms of this affection are so numerous and varied that for a proper understanding we must divide them into two classes: (1) Those referable directly to the digestive tract; (2) those purely toxic (from absorption).

Primary (digestive) Symptoms.—The appetite in these cases is either very good or entirely wanting, the patients complaining that they "can't get enough to eat," but feel badly after eating, or that "nothing looks good," and that it is simply the fact that they know they must eat that enables them to take food at all. There is no pain until from two to four hours after meals. These patients then become "puffed" and complain of pain in the epigastrium and around the umbilicus, this being accompanied either by belching gas, which may become fetid; or if the belching continues, by regurgitation of food, followed, in turn,

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by pyrosis, with a feeling of heaviness in the epigastrium. The bowels are for a long time constipated, but later the movements become soft, offensive and acid in reaction. They are frequently expelled with pain, and large quantities of glairy mucus, yellow or white in color, are mixed with the feces in a majority of these cases.

Secondary (toxic) Symptoms.—Aches and pains (toxic myalgias and neuralgias), referred to the chest and right hypochondrium, are frequently complained of and often mistaken for attacks of pleurisy. One of the most distressing of the toxic symptoms with which one has to deal is the morning depression these patients suffer from, accompanied by headache and a feeling of anxiety, which remains with them for several hours. Insomnia frequently accompanies this disorder. The liver is invariably found enlarged in these cases, and the patients will complain of a feeling of weight or pain in the right hypochrondrium. These patients also suffer from vertigo, especially on arising.

Reflex toxic symptoms involving the circulation, and referable to the skin, are frequent. Chief among these is a feeling of chilliness. When this appears it is often referred to by the patient as "fever coming on"; but when the temperature is taken no rise is found. This symptom is seen generally about an hour after a meal.

Partial and fleeting edema of the face, hands and feet, sometimes accompanied by itching, is observed. Flushing of the face, accompanied by a burning sensation, is a common symptom coming on from two to three hours after a meal and continuing for one-half to one hour. These patients are also subject to spells of perspiration, manifested more particularly about the neck, chest and face, and coming on both at night and in the daytime, usually as soon as they fall asleep. Such patients are the ones who complain of catching cold easily.

Patients suffering from the gastric complications complain far more of dyspnea than do those presenting no symptoms in this direction. About 10 per cent. of my cases showed albuminuria, without other evidence of kidney complication. The albumin entirely disappeared when proper measures were instituted. It is in these cases of dilated stomach complicating pulmonary tuberculosis that one sees the so-called "tuberculous rheumatism" and painful joints. My histories show that 30 per cent. of the cases complained of painful joints.

Of the purely toxic nervous symptoms occurring in my cases, migraine, spinal irritation, and cerebrocardiac neuroses with hypochondriasis were the most frequent.

Diagnosis. — The physical procedures most useful in making a diagnosis of the affection are percussion and auscultation.

Percussion, as practised in endeavoring to outline the stomach, is a delicate manipulation, for one must be exceedingly careful to differentiate between the stomach tympany and that produced by the colon. To obviate this source of error, one should percuss from above downward, first determining the upper border of stomach tympany and marking it with a pencil, and then following that tympanitic note downward. The lower border can then usually be made out clearly. After the upper and lower limits of the stomach have been determined, the right and left border should be ascertained as well. These limits can be found by the same method of percussion, the right border being first determined and the same note then followed to its extreme limits on the left.

Auscultation, with the aim of eliciting a splashing sound, is of much greater importance than percussion, for the ear is thus brought into play, and by careful "clapotage" from above downward the lower border can be easily found and marked out. It is imperative that this sign be always looked for at least four to six hours after a meal; in fact, a fasting stomach—eight to ten hours after a meal—is best of all for this purpose. If splashing should not be heard on the first few strokes, one should not be misled into considering that the stomach is not dilated, for it may have become flattened out and lie behind the abdominal walls. If the patient is now required to drink a half-glassful of plain water, it will be found, if dilatation exists, that the splashing sound can immediately be elicited. It should not be forgotten that every stomach that is not retracted when it is empty is a dilated stomach. Dilatation is not distention, but a *stretching* of the stomach, the cavity of which is apparent only when it is empty because, though its walls may touch each other, it is no longer capable of diminishing its own size by retraction.

If the true extent of the dilatation is to be ascertained, it is better then to inflate the stomach by having the patient drink a half-glassful of water in which has been dissolved a teaspoonful of sodium bicarbonate. After gentle massage of the region overlying the stomach, thoroughly to mix the soda solution with the stomach contents, the

stomach area can be outlined once more by percussion before the few drops of hydrochloric acid are added. After the latter has been given, one should wait a few moments for the gas to form and inflate the stomach. Now the outline of the stomach should be made out while the patient is in the recumbent posture; then, the patient arising to his feet, the upper and lower border should be especially determined while he is in this position, for in this manner the full extent of the sagging of the organ can be shown.

Should one not be satisfied with the ordinary methods of diagnosis alone, recourse may be had to the bismuth meal and the *x*-ray, when a true, graphic picture of the extent of the displacement can be obtained.

Treatment.—The benefit afforded these patients by proper remedial measures is surprising. Not only are the digestive and toxic conditions removed, but the general condition soon responds to treatment, much improvement in the pulmonary tuberculous trouble becoming manifest. Sight should, of course, not be lost of the primary tuberculous affection, and tuberculin in some form—that best suited to the case—should be used, while at the same time treatment for the secondary (gastric) affection is being instituted.

Treatment of the dilated stomach as a complication of tuberculosis of the lungs consists of the use of mechanical, dietetic, medicinal, hydrotherapeutic and hygienic measures. A combination of all these is necessary, one being as essential as the other, and the successful outcome of the treatment depends entirely on strict supervision by the physician and the hearty co-operation of the patient in carrying out the measures in detail.

Mechanical.—Support must be furnished to the stomach and to the flaccid abdominal wall, and my preference is to apply a Rose belt of Z O adhesive plaster or moleskin after so manipulating the organ as to raise it up. For this purpose I place the patient on his back, with the hips elevated on a firm, folded pillow. I never allow the straps to remain after they lose tension or become wrinkled, lest the skin be made sore, but remove them with benzine, wash the skin carefully with alcohol, and replace the straps, after carefully examining the position of the organ. As soon as the patient shows improvement I have a supporting belt made to fit him, and have him wear the belt night and day until there is a gain in weight, when I allow him to remove it at night, with the understanding that it is to be replaced in the morning before arising, while still in the recumbent position.

Dietetic.—Much depends on diet in the treatment of this affection, and, while the tuberculous condition must be taken into consideration, one must not forget that most depends, in this class of the tuberculous, on the careful nursing of a bad stomach for a favorable outcome of the pulmonary lesion. Secondary enteric infections must simultaneously be prevented, if possible. Several desiderata stand out prominently in this regard, and first among them, to my mind, is a dry diet, in the sense that no liquids are to be taken with meals or for two or two and one-half hours after. This is advisable for two reasons: (1) The increased bulk of stomach contents (for these patients are frequently drinking copiously of water with meals) by gravity helps to sag down the already dilated organ, as well as to decrease motility, which is already diminished in a large majority of instances; (2) there is superinduced a great reduction in the hydrochloric acid content which, in conjunction with the already impaired digestion, renders decompositions and fermentation much easier, with resulting formation of organic acids.

The feature of next importance in the treatment is to have at least ten hours between the heavy meals of the day. In this way the stomach is given opportunity to empty itself and then rest before another tax is thrown upon it. I order for the patient a good breakfast, make lunch a light meal, and then supply a good dinner at night. Another factor which I invariably insist on is absolute rest, and by this I mean lying down with an attempt to sleep (not lying down reading books, or talking), after each meal, for from one-half to one hour.

Alcoholic drinks of all kinds are interdicted in these cases, as they are badly borne and aggravate both the gastric and pulmonary disorders. Neither is fresh bread allowed these patients, but stale bread, toast or crust may be taken, as well as crackers made with hard dough. Fresh bread is a cause of considerable discomfort, owing to fermentation, in these cases, and I have found it necessary time and again, where I have attempted to allow the use of it, to order it discontinued on account of increased flatulence.

Medicinal.—The indications for medicinal treatment in these cases are twofold: (1) To supply to the stomach the necessary hydrochloric acid and pepsin to aid and hasten digestion; in fact, the hydrochloric acid must be added in sufficient quantities to

prevent decomposition and fermentation; (2) to stimulate muscular tone and secretion, an indication met by the use of bitter stomachics, such as nux vomica, cinchona, quassia, etc.

The drugs answering these indications may be combined, and my favorite formula is:

Tincturæ Nucis Vomicæ.....
Acidi Hydrochlorici Diluti.....āā f. ℥ss
Glyceriti Pepsini .....f. ℥iss
Aquæ Menthæ Piperitæ....q. s. ad f. ℥iij
M. Sig.: One teaspoonful in a half-glassful of water after each meal.

This may be supplemented if there is considerable flatulence, by the addition of chloroform water, 2 or 3 minims to the dose, until this symptom is overcome, when it should be discontinued from the prescription.

Hydrotherapeutic. — Cold shower or sponge baths to the entire body, with a needle bath to the abdomen, followed by a brisk rub with a Turkish towel until the skin reacts, the whole administered on arising in the morning, constitute a valuable adjunct, improving the tone of the entire body and thereby increasing functional activity in the organs.

In cases with enteric symptoms—mucous passages and flatus—I use Priessnitz compresses, made by wringing Turkish towels out in hot water. These are applied to the abdomen for a half-hour after meals, while the patient is resting. The hot towels are kept covered with a small blanket or piece of woolen material.

Hygienic.—Under this heading I refer in particular to alimentary hygiene—that is, to those measures ordered the patient which have as their objects the rapid digestion of food, and the prevention of the long delay of food in the stomach.

First among these is the thorough mastication of all food. The patient must not alone chew it well, but must eat slowly. Another feature is total abstinence from worry during meals. Some patients have a habit of waiting until mealtime to do their fretting, and I invariably caution against fretting and worrying, especially during these periods.

No eating or drinking between meals is to be permitted, except as ordered. Raw egg may be allowed these cases between meals, when the stomach has shown sufficient recuperative power to handle them, but until this time nothing should be permitted during these intervals.

Orders must be given to avoid fats, particularly at first; later they may be allowed in sufficient quantity to supply the demands of the individual patient. There will be found some patients who, from habit or other causes, require more fat than the average, and these are the cases in which fats can be added to the diet earlier than would be advisable elsewhere.

Seldom does lavage have to be resorted to in these cases. Even where the occasion for it does appear to present itself, care should be taken to avoid it in cases with active pulmonary lesions and febrile temperature.

THE INTERNAL TREATMENT OF BASEDOW'S DISEASE*

By Dr. W. H. Becker

In the modern treatment of Basedow's disease, numerous exact statistics seem to show that surgical procedure give the best and most promising results. Internal treatment, however, is also very efficacious though the results are not so widely advertised in literature. The author has looked through the journals of the Medical Clinic in Giessen from 1890 to 1912, and among about 50,000 cases came across 61 cases of Basedow's disease. During the first 13 years the treatment was only symptomatic. During 1913 the Antithyroidin of Moebius was employed for the first time (one woman "not cured," one man and three women "improved"). Rhodagen was used twice in 1905 and 1906. Röntgen treatment was employed in 1906 without result in the case of a man who had already been treated ineffectually with Antithyroidin-Moebius. In 1907 experiments were made with a diet free from chlorides and meat. Of 5 cases, 4 were improved and one not improved. Experiments were also made with phytin and sodium phosphate. Two cases were not improved, one woman was much benefitted.

The author now investigated the further history of those patients treated specifically and discharged as improved in order to determine how long the improvement continued. Reports were obtained from 7 out of 10 cases and in all the improvement was permanent.

Case 1.—Female, 51 years old. In the clinic from January 24 to February 17, 1905. At this time the pulse was irregular, usually of high tension and 98 per minute. The bowels were irregular and there were disagreeable eructations. The patient was treated with rhodagen, digitalis and galvanization of the sympathetic. Discharged improved. The treatment was continued for six months. According to reports in May, 1913, further medical aid had not been required. The circumference of the neck has not diminished and occasionally there is cardiac palpitation, but other-

*Translated for Merck's Archives from the Deutsch. Med. Woch., 1913, No. 37.

wise the patient feels fairly well. The pulse is full, regular, 100 to 110 per minute. Patient sleeps well.

Case 2.—Female, 20 years old. In the clinic from May 23 to July 30, 1907. Complained of a feeling of heat, palpitation, dyspnea, attacks of vertigo and excitement. There were widening of the palpebral fissure and slight struma. The pulse was regular, 160 per minute and of high tension. The patient was put on a diet free from salt and meat and given phytin three times daily, and on April 30, 1913, sodium glycocholate. The patient reports considerable improvement after she had continued this treatment for some time. Last year she became worse after excitement and hard work. The treatment was resumed and the condition now is satisfactory.

Case 3.—Female, 27 years old. In the clinic from June 10 to July 28, 1909. Complained of lassitude, swelling of the neck, exophthalmos, irritability, palpitation. The symptoms improved after antithyroidin was given. The weight increased steadily from 56.5 to 60.3 kg. The family physician reported, May 20, 1913, that the patient had married and that the improvement continued steadily.

Case 4.—Female, 46 years old. In the clinic from August 21 to September 4, 1909. Complained of headache, lassitude, vomiting, swelling of the neck and cardiac disturbances. She was free from symptoms after Antithyroidin and warm baths and increased in weight six pounds. May 27, 1913, she reports that the improvement has continued. The swelling of the neck disappeared rapidly and permanently.

Case 5.—Female, 29 years old. In the clinic from July 25 to September 2. Complained of diminution of vision, cardiac palpitation, tremor and swelling of the neck. Received first antithyroidin and later sodium phosphate. Discharged improved. The exophthalmos is less pronounced and there is an increase in weight of five pounds. The family physician reports, April 25, 1913, that the present condition is very satisfactory.

Case 6.—Female, 35 years old. In the clinic from February 9 to 22, 1911. Operation declined. Noticed exophthalmos for the first time 1907, after confinement. Soon a feeling of fear, palpitation and tremor appeared. The goitre was the size of a pigeon's egg. Salt-free diet and rest in bed. Was discharged too early, with slight increase in weight. Later went through two courses of treatment with antithyroidin. At this time her condition is very satisfactory.

Case 7.—Female, 36 years old. In the clinic from August 2 to September 1, 1912. Slightly excited and complains of palpitation, dyspnea, headache, swelling of the neck. Moebius' symptom is positive. Treatment first with narcotics and baths, later with sodium phosphate. Was discharged after an increase in weight of eight pounds. On May 24, 1913, the pulse was full, strong and regular, 72 to 75 per minute, the circumference of the neck had diminished and Moebius' sign was negative.

Though these small statistics show 100 per cent permanent improvement, the author does not wish to conclude that specific treatment is always so satisfactory nor does he question the value of partial strumectomy. There are, however, a number of absolute contra-indications to this operation, such as the persistence of the thymus which is rarely detected. A number of cases of Basedow's disease also show spontaneous improvement and specific treatment will often considerably alleviate the symptoms. Hence it may be stated as a rule that conservative treatment for several months is in place before operation is advised unless there is an urgent indication for the latter.

The following are some recent comments on the use of antithyroidin in Basedow's disease:

Dr. H. Alamartine. The surgical treatment of Basedow's Disease (Gazette des Hôpitaux No. 148, 1911).—"Antitoxic treatment with the serum of thyroidectomized animals, particularly Antithydoidin, has led to a number of cures and remarkable improvements. Antithyroidin should be given a trial before operative procedure."

Dr. Emiliano Verde. Hyperthyreosis and Athyreosis as causes of Basedow's Disease and myxedema and the treatment of Basedow's Disease with Antithyroidin (Giorn internat delle Scienze Mediche No. 1, 1912).—"The results obtained impartially speak in favor of the Antithyroidin treatment of Basedow's disease. My case and the one reported by Prof. Rubino were undoubtedly of severe type and were not favorably influenced by other treatment."

Dr. Paul Stein, Bad Nauheim. The treatment of Basedow's disease with Antithyroidin and Nauheim baths (Zeitschr. f. Balnerlogie, No. 14, 1911-12).—"Antithyroidin has decided Cardio-tonic properties. Digitalis will regulate the action of the heart and allow the heart muscles to recuperate while Antithyroidin will neutralize the toxins of the disease. The cause of the heart irritation is thus removed and the heart will return to normal size."

"In severe cases there is always considerable emaciation. According to Kraus (Berlin), the increase in weight and the slowing of the pulse are the most important signs of improvement. There can be no doubt that Antithyroidin will neutralize the products of abnormal thyroid activity which are responsible for the increased metabolism.

"The effect of carbonated, thermal baths has been emphasized by a number of observers. The best results are seen where the baths are combined with the Antithyroidin treatment."

Dr. Ed. Laser: Thyreotoxic symptoms and their treatment with Antithyroidin Munch. Med. Woch., No. 13, 1911).—"If the last case be excluded since the treatment was too short, all the other cases will show the value of the remedy. In case 1, 2 and

4 the frequency of the pulse became less and remained so permanently or at least for a long time. In two cases the apex-beat returned to its normal showing that the heart action was more quiet and the dilatation had disappeared. In two cases the circumference of the neck diminished. In all four cases there was considerable improvement in the subjective symptoms. The specific action of the remedy is proof that the symptoms were due to increased activity of the thyroid gland. In case 4 other treatment was also efficacious but is much more difficult to carry out than the simple administration of Antithyroidin."

Dr. BLANCHOD: A persistent case of Basedow's Disease treated and cured with Antithyroidin-Moebius (La Province Médic, No. 49, 1911).—"The action of Antithyroidin-Moebius in this case was very prompt. After the first and second treatment there were relapses, while after the third treatment there was so much improvement that it may be looked upon as a cure. The improvement was not accidental but always coincided with the administration of the drug."

Dr. A. KRECKE: The frequency and diagnosis of disturbances caused by hypersecretion of the thyroid (Thyreoses) (Munch. Med. Woch., No. 31, 1911).—"Antithyroidin-Moebius has given me good results in cardiothyreotic conditions and in Basedow's disease. In valvular lesions no results were seen, hence the remedy is of value in differential diagnosis."

Dr. E. A. KOPYSTYNSKI: Psychosis in Basedow's Disease treated with Antithyroidin (Oboszrenie Psychiatrii, No. 1, 1911).—"I am inclined to believe that the psychosis was benefitted in a relatively short time by the use of Antithyroidin, despite the fact that the patient was in a relatively poor condition. The Basedow symptoms also receded, showing the relationship between the two conditions. It will be of interest to try Antithyroidin in other cases of Basedow's Disease associated with a psychosis."

Dr. ROMHELD: Dangers of Iodide Medication, susceptibility to iodides and Basedow's Disease caused by iodides (Mediz. Klinik, No. 49, 1910).—The case shows almost with the precision of an experiment that the administration of iodides in patients with a struma will provoke symptoms of Basedow's Disease. The antidote for iodides, sodium sulphanilate did not prove effective while the Antithyroidin of Moebius gave good results. In a sanatorium where so many different factors come into consideration, it is often difficult to determine the action of a drug. In this case, however, the improvement began on the day when the serum was first administered and while no change was made in the general treatment."

TOLERATION OF ARSENIC BY THE HUMAN SYSTEM

H. G. A. Harding conducted a series of experiments to ascertain the toleration of arsenic by the human system. He commenced with 1/30 grn. doses three times a day immediately after food, and continued for four days without any results beneficial or otherwise. Analysis of an aliquot part of the urine passed, the daily dose of arsenic being 1/20 grn., yielded 1/50 grn. per diem, thus showing 3/100 grn. per diem otherwise disposed of. Doses of 1/15 grn. were taken on an empty stomach three times daily. The result was that the system became irritated and a distinct feeling of discomfort was experienced, lasting over two hours; 75 per cent. of this amount appeared in the urine; 1/5 grn. was then taken at a single administration. This also produced irritability and uncomfortable abdominal pains of a more or less severe character. Recourse was now had to the old dosage of 1/15 grn., and after the system became quite normal again the dose was increased to 1/12 grn., then to 1/10 grn., 1/8 grn. and to 1/5 grn. By thus going gradually to 1/5 grn. it was found that the amount was quite well tolerated without any discomfort or marked changes, and, moreover, the average percentage of the drug appearing in the urine was maintained. At this stage, but not before, the urine began to depart from normal. Proceeding still onward the doses were increased to 2/3 grn. ¾ grn., 5/6 grn., 1 grn. At this point it was felt that the limit was being approached. The next and highest dose reached was 1 1/5 grn. which produced irritability and distinct and lasting discomfort every way it was taken, and all precautions notwithstanding. The drug was now discontinued, but fullness after meals and general derangement were felt for several days. Harding then kept on with the drug, decreasing the amount daily. In one week 1/5 grn. was reached and in less than another week arsenic was dispensed with altogether without any of the symptoms mentioned above.—Lancet, per Med. Record.

Migraine

Sodii Bromidi.....grn. xij.
Antipyrinæ .....grn. vij.
Tincture Cimicfugæ.....ℳxx.
Aquæ .....ad ℥ss.
Twice a day.

Progress in Materia Medica and Therapeutics

TREATMENT OF HERPES TONSURANS

Tincture of iodine in combination with soft soap or spirits of soap has proven a most efficacious remedy for herpes tonsurons but only too often an eczema will result. Thedering, therefore, recommends the following treatment: Paint the area every morning and evening for four days with tincture of iodine without the previous use of soap. For the following two days, apply a 3 per cent. salicylic acid salve (acid salicylic 1.0; ol. olivar. q. s., lanolin ad 30.0) to soften the resulting crust. On the seventh day, the softened crust is removed by washing once with soap and water. If necessary, this procedure is repeated. The pustular eczema so often seen is readily avoided in this way, because the use of soap is restricted.—Muench. med. Woch., Dec. 2, 1913.

TREATMENT OF PERTUSSIS

S. Wassermann, of Cleveland, O., writes that the treatment of pertussis should not be directed so much to the slight, local changes in the mucous membranes, but rather to the reduction of overexcitability of the nerve tracts. For a sedative effect on the laryngospasm the author has found that excellent results may be obtained by combining quinine with an hypnotic. Following such treatment the vomiting ceases and the disease takes on quite a different aspect. The author found the combination of veronal very serviceable, though where it was to be used a long time he used a quinine-bromural combination.

The attacks were materially diminished and the disease became much milder. He therefore recommends to begin treatment with veronal-quinine (dose for small children veronal, grn. ½; quinine, 2 to 3 times as much, three times daily) and then to continue with bromural-quinine (dose for small children, bromural grn. 1 to 3; quinine, 2 to 3 times as much, three times daily). The drugs may be administered mixed with chocolate or in tablets, or in form of euquinine-bromural, or the quinine may be given as suppository and the bromural by mouth.

The drug seems to have an effect upon the medulla oblongata and in this way the favorable effect not obtained by other drugs is explained. Hypnotics used as sedatives in doses too small to induce sleep seem to open up new therapeutic possibilities. Another advantage of the combination lies in the fact that bromural seems able to counteract the disagreeable after-effects of quinine, such as nausea and tinnitus. This should greatly simplify the treatment of these little patients.—Therap. Monatshefte, Oct. 1913.

TREATMENT OF CHRONIC NASAL CATARRH

In the treatment of chronic nasal catarrh, W. Wilson writes that it is of the greatest importance to look after the general health. Recovery is often accomplished by the adoption of a wholesome open air mode of life with abstention from alcohol, tobacco, etc. To relieve portal congestion he uses calomel on alternate evenings with magnesium sulphate in the mornings.

Local treatment should be persisted in and should consist in simple lavage with a solution of one teaspoonful of the following in a pint of tepid water:

Acidi Borici Pulv.....
Sodii Bicarbonatis .....
Sodii Chloridi .....āā

Add a little crystalline menthol, mix well and grind.

For the application a ball syringe is used but great gentleness is required. To prevent the fluid entering the sinuses the head should be held forward and the patient instructed to give rapid, sharp expirations through the mouth. Swallowing movements should not be made.

The following oily solution should be used with an atomizer where there is a tendency to dryness and crust formation:

Mentholis .....grn. v
Camphoræ .....grn. ij
Olei Eucalypti .....m iij
Olei Amygdalæ Dulcis.....ad. ʒj

M. et ft. solutio.

If it is found that nasal obstruction is so great that cocaine and epinephrin cause no shrinkage of tissues it will be necessary to free the respiratory passages by operation before any successful treatment can be instituted for the catarrhal condition.—Practitioner, Oct., 1913.

TREATMENT OF FUNCTIONAL METRORRHAGIA

R. Sturmdorf, of New York, discusses the uterine hemorrhages which occur usually but not invariably at the two extremes of the reproductive period of life and which from lack of other organic cause justify the use of the term "functional metrorrhagia." The diagnosis obviously rests on the exclusion of every demonstrable exciting factor, which is not always possible, but which when it can be approximately made suggests a favorable prognosis providing that the bleeding can be held within safe limits. These hemorrhages, he says, are due to a perverted menstruation and the therapeutic difficulties can be appreciated. While the incoagulability of normal menstrual blood has been noticed since earliest times, the same incoagulability characterizing the cases here discussed has escaped attention. It is due, he says, to the presence of an inhibiting substance, periodically secreted by the endometrium, which is activated to its secretion by a hormone generated in the Graafian follicles. Thus far we have not been able to isolate this substance or discover its specific antagonist, but it can be circumvented by effectual measures, the regulation of the systemic blood-pressure and the inhibition of the endometrical hyperactivity. There is in these cases, especially in the preclimacteric ones, a persistent high pressure, ranging from 150 mm. upward, and the indications for vasodilators is obvious. Under the guidance of a reliable pressure apparatus, aconite, nitroglycerin, and especially atropine should be administered until the vascular hypertension is reduced to normal. Opium is a sovereign adjuvant and is especially useful when there is cerebral ereteherism. He warns against the use of ergot or the curet unless absolutely indicated, and this would place the case outside the present type. He mentions two agents which meet the local indications which moderate the bleeding without destroying the endometrium. These are pure acetone and 16 per cent. dilution of liquor formaldehydi. "Either of these agents is cautiously but copiously introduced into the uterine cavity by means of an intra-uterine syringe. The syringe holds ½ to 1 ounce. The uterine end of the cannula is wrapped in a thin layer of sterile gauze and thus introduced into the uterine cavity to the fundus. A free return flow must be assured by the patency of the cervical canal, and the vagina protected from the irritating fluid by proper lubrication. The syringe is slowly emptied of its contents and carefully withdrawn in such a manner as to leave its saturated wrappings in contact with the endometrium for the twenty-four hours. A daily repetition of this procedure is essential." The hemorrhage is steadily reduced until a slight seepage inaugurates a normal intermenstrual period. If this method fails, a few applications of the D'Arsonval spark as used in vesicle papillomas will give the desired result. Sturmdorf gives these as outlining the general principles for the control of these hemorrhages. There are innumerable details, he says, that are necessarily omitted. It must be borne in mind that we are not dealing merely with a bleeding uterus but with a bleeding woman. The management of these cases may sometimes tax the skill, patience and therapeutics of the most experienced.—Jour. A. M. A., Feb. 14, 1914.

INTRAVENOUS ADMINISTRATION OF CAMPHOR

Camphor is being used more and more for infectious diseases, and the desire has been frequently expressed to find a convenient way of administering it in proper dose directly into the veins. Schüle recommends a solution of 0.2 Gm. camphor in 0.5 Cc. sulphuric ether, which, he says, causes no discomfort beyond a slight burning and no changes in the blood. Rarely there is slight feeling of exaltation and a trifling cough. Care is necessary so that none of the solution enters the subcutaneous tissues.—Muench. med. Woch., Jan. 6, 1914.

EXOPHTHALMIC GOITER IN CASES OF SYPHILIS

G. Milian writes that among the numerous infections that may bring on symptoms of Basedow's disease, syphilis is one of the most important from the practical standpoint, in view of the favorable effects obtainable with specific treatment in such cases. Hischmann observed in Gaucher's clinic the case of a girl 19 years, with syphilis of six months' standing, in whom, after treatment for secondary manifestations had been given, rather suddenly developed a swelling in the central and lower portions of the neck, especially on the right side. The swelling rapidly increased in size, and became both painful and tender. There was no exophthalmos, but slight tremor and tachycardia (120 per minute.) The patient also complained of mild attacks of epistaxis, of frequent sensations of heat and profuse perspiration. Under the influence of injections of mercury benzoate and of potassium iodide, these phenomena almost completely disappeared.

As Gaucher and Lévy-Fränkel have

shown, the Basedow syndrome may be observed in the secondary stage of syphilis, when it is frequently preceded by specific buccopharyngeal ulcerations. Its onset is generally insidious, the earliest sign being usually tachycardia, less often thyroid enlargement. Clinically, there is no means of distinguishing it from exophthalmic goiter dependent on any other cause, except the efficacious action of mercury and iodide, which constitutes the sole argument in favor of its being essentially syphilitic in nature. Potassium iodide, indeed, often badly borne by Basedow cases, here exerts a favorable effect.—Monthly Cyclo., Feb., 1914.

CONCENTRATED INJECTIONS OF NEOSALVARSAN

According to R. Frühwold the injection of three doses of neosalvarsan 0.6 Gm. in 10 C.c. of water within 10 days will have a prompt effect on syphilitic manifestations of all stages and will cause their disappearance in about two weeks. About two-thirds of the cases show after-effects, such as fever, headache, vomiting and diarrhea; these patients usually show active syphilitic lesion. After the second injection, the after-effects are less common; after the third, somewhat more common. Cutaneous reactions, such as early or late erythemata are common. Injection into the subcutaneous tissues is to be carefully avoided since infiltrations will form which are, however, not dangerous if properly treated. No severe after-effects have ever been observed as a result of the intravenous injection of concentrated solutions.—Münch. Med. Woch., Nov. 11, 1915.

GUAIACOL IN PULMONARY TUBERCULOSIS

E. Mayberry, in the "Brit. Med. Jour.," makes a plea for the more frequent and more persistent use of guaiacol. He says, regarding this abandonment, "1. It was not given in large enough doses; 2, it was not continued for a sufficiently long period; 3, it may not have been possible for the drug to have been administered regularly." On the last point, he remarks, that intervals of only a few days in its administration have a prejudicial effect on its action. It is necessary to give large doses, ranging up to at least twelve or fifteen minims three times daily, and this must be kept up without intermission for periods of months, when highly satisfactory results may be secured. Most of the patients to whom Mayberry has given guaiacol with good results had been under observation in the institution for some time before the administration and had not been doing very well. By giving the drug immediately before the taking of food, no disturbance of digestion resulted from the long continued use of these large doses. The dose of the drug is increased by two minims a week until the patient is taking the full fifteen minims three times a day. The following is the combination in which it is administered; Guaiacol, one dram; alcohol, one ounce; syrup of lemon, one ounce; spirit of chloroform, two drams; water to make six ounces. Of this half an ounce is taken three times daily.—N. Y. Med. Jour., Jan. 31, 1914.

SCARIFICATION TREATMENT OF LUPUS

J. Nicholas and H. Moutot claim to have employed the following treatment of lupus with success: Cross scarifications are first made, down to a depth where a resisting layer of tissue is felt, and over an area somewhat larger than that apparently covered by the lesions. Bleeding is then carefully arrested, tension being meanwhile exerted upon the skin to hold apart the margins of the incisions. At most ten minutes are required to secure complete hemostasis by means of tampons of absorbent cotton. With the skin still on the stretch, the area is then painted over several times with a solution of zinc chloride:

Zinci Chloridi ..... gru. xlv
Aquæ Destillatæ ..... f. ʒi
M. et ft. solutio.

To favor penetration of the zinc salt the area may even be rubbed with the applicator, which consists of gauze or cotton mounted on a stick of wood. After each application a tampon is used to remove the excess of solution. The caustic action is known to be sufficient when the cross scarifications turn white. After again taking up the excess, the area is painted over with tincture of iodine. The after-care consists in applying morning and evening tincture of iodine diluted four or six times with eighty per cent. alcohol.

Healing of the scarifications takes place in five to twelve days, and results in the production of a whitish surface with a network of scarlike lines enclosing small islets of lupus tissue. At subsequent treatments these islets are progressively dealt with, the linear scarifications being made each time in different directions, until finally the whole area is transformed into a sheet of whitish cicatricial tissue. The latter is the same as would result from simple scarification, being supple, even, and inconspicuous. From their experience with the com-

bined method in numerous cases of lupus vulgaris the authors conclude that it leads to a much more rapid cure than simple scarification or scarification with iodine alone. Superficial and relatively small lupus areas are cured by four or five treatments, that is, in about two months. The method was also tried in a few cases of lupus erythematosus, but with less satisfactory results; although there was rapid improvement at first, complete recovery was obtained only after a long period, and at times recurrence followed.—N. Y. Med. Jour., Feb. 21, 1914.

TREATMENT OF PSORIASIS

W. S. Devausney writes that the first measure in the treatment of psoriasis is to have the patient immersed for about 20 minutes in a tub of hot water in which the following has been dissolved:

Potassii Carbonatis 3iv
Sodii Boratis .....
Sodii Carbonatis .....āā 3iij
Amyli Pulv. 3xvj

The effect of this bath is to cool and soften the skin so as to facilitate the removal of the scales. After the skin has been thoroughly dried the following ointment is applied to the affected areas and the parts covered with gauze:

Olei Rusci 3ijss
Acidi Salicylici .....
Chrysarobini .....āā 3v
Adipis Lanæ Anhyd.....3vj
Misce. et adde:
Saponis Viridis 3v

If this application gives rise to an excessive dermatitis it should be discontinued for a few days and a soothing ointment such as the following applied:

Glyceriti Boroglycerini 3ss
Adipis Lanæ 3ij
Ung. Aquæ Rosæ.....3vj

The following may be painted on where the lesions are isolated and not very extensive:

Acidi Salicylici 3j
Chrysarobini 3jss
Collodii 3j
M. et ft. collodium.
Sig.: Keep well corked and never apply when near a flame.

This should be used night and morning. Every third or fourth day the patient should thoroughly soak in the medicated bath and then reapply the collodion. For psoriasis of the face, neck, and scalp the author applies night and morning the official Unguentum Hydrargyri Ammoniati.

The internal treatment of psoriasis should begin with ten grain tablet of calomel and soda at bedtime, following in the morning by a saline. As for the diet, the author thinks well of placing the patients for the first week or ten days on rice, bread, butter, and water (the rice to be well masticated). Subsequently a strictly vegetable diet should still be continued. Abstention from meats, eggs, cheese, milk, and alcohol is to be advised. The following mixture for internal use is beneficial:

Potassii Acetatis 3vi
Sodii Salicylatis 3iii
Fl. Extr. Rhamni Purshianæ.....3ss
Misturæ Rhei et Sodæ.....ad. 3iii
M. Sig.: One dram three times a day in a half glassful of water after meals.

In addition, there should be administered hypodermically two or three times weekly four drops of the liquor sodii arsenatis, the dose being gradually increased to the tolerance limit. Pills containing arsenic may be used instead, if desired. The internal medication should be continued several weeks after entire disappearance of the lesions.—Jour. Med. Soc. of N. J., Dec., 1913.

EMETINE IN AMEBIC DYSENTERY

The history of the emetine treatment of amebic dysentery is given by E. B. Vedder, Captain Med. Corps, U. S. Army, Washington, D. C., who also reports his own experience. The disease, he says, is more prevalent in this country than has been supposed and he has therefore brought together and discussed this latest and most successful method of its treatment. As to the effectiveness of the emetine treatment he gives a table of 110 cases in which this method was used by twenty-two observers and in which ninety-nine patients were clinically cured, while eleven died. This gives a positive and satisfactory answer to the question. The standard of cure in these cases consisted in the return to normal formed stools and a total absence of any dysenteric symptoms. The fatal cases were those well advanced and the rapidity of improvement in the others was noteworthy. In sixteen cases of hepatitis due to the ameba he finds sixteen cases reported by nine observers with 100 per cent. of cures. Up to date these cases have not shown any tendency to recurrence so often observed after surgical treatment. The question whether or not the cures are permanent is discussed. Many of the patients have continued to harbor amebas after the reported cure. The fact that patients may have a double infection with *Entamoeba histolytica* and *E. coli* is to be remembered, the latter is, however, a harmless parasite. It seems to be a fact, however, that a patient may

pass the *E. histolytica* for at least a couple of years and apparently be protected against reinfection. The final proof of permanent cure will have to depend on a longer period of observation than has yet elapsed in the cases reported, but a permanent cure may be considered possible. In most of the cases the drug has been administered hypodermically and in other cases in what would seem dangerously large doses without any permanent ill effects. Vedder thinks, if the advice of certain authors is taken as to the size of doses, fatalities may occur which are liable to discredit the treatment. He especially mentions the large doses advised by Baermann and Heinemann as inadvisable. Theoretically the intravenous method offers certain advantages, but Vedder considers the hypodermic medication safer. Successful cases have been reported when it has been given by the mouth, but he has not had striking success in this way and therefore recommends the hypodermic administration. The hydrochloride of emetine is more soluble and evidence seems to favor its preference. The customary procedure has been to give from ⅓ to 1 grain daily for about ten days, but Vedder prefers to give ⅓ grain three times a day for about ten days, which can be administered without any serious inconvenience of any kind. Any recurrence of symptoms should be the signal for renewing the treatment. Liver abscess is treated in the same way, but it cannot be expected that pus will be absorbed, and an exploratory puncture should be made. If pus is found, it should be evacuated and drainage used for a few days. Since patients after cure often become carriers of encysted amebas it is desirable to prevent this and Vedder thinks that high irrigation of silver nitrate and quinine may be effective. His conclusions are summed up as follows: "1. Emetine is a true specific in amebic dysentery and hepatitis, and the results obtained by its use compare very favorably with the results obtained with salvarsan in syphilis. 2. The hypodermic use of the hydrochloride salt is the preferred method of treatment. 3. A large percentage of the cases so treated continue to harbor *Entamoeba histolytica* (often in the encysted and most dangerous form) in the feces for some time. 4. While in view of this fact it is impossible to state at present that patients treated by emetine will remain permanently cured, yet the prospects of obtaining permanent cures by this method are encouraging. 5. The presence of a considerable number of these chronic ameba carriers constitutes a sanitary menace to the community. 6. It is possible that the amebas may be removed from these carriers by a course of irrigations of quinine or silver nitrate. 7. Experiments have failed to show that emetine possesses any marked therapeutic virtue in bacillary dysentery, syphilis or rabies."

A case of amebic dysentery of thirteen years' standing cured by hypodermic injections of emetine hydrochloride is also reported by G. W. McCaskey, of Fort Wayne, Ind. The patient, a woman of 70 years, previously in good health, contracted acute dysentery in 1900 while in Tennessee, which passed into a chronic diarrhea, with at times bloody discharges. During and following the acute illness she lost 30 pounds in weight, which was later partially regained. With special care as to diet and extensive treatment, she kept in a reasonable degree of health. About three or four years ago, however, she began again to lose strength and weight and finally consulted Dr. McCaskey, Aug. 25, 1913. Besides a leukocytosis of 17,600 and the discovery of many amebas in the semi-fluid feces, nothing very noteworthy was found on examination. Emetine hydrochloride (¾ grn. and 1 grn.) was injected on three successive days, causing at first only moderate nausea, but after the second and third injections severe nausea and abdominal distress. The amebas disappeared in the feces, and the first-formed stool in thirteen years was passed, and the patient was discharged September 8. There were two relapses which were treated and the patient was finally discharged on October 27 as cured. This is the second case encountered by Dr. McCaskey; the other one was fatal, in spite of the treatment known at the time. He considers the present one of interest as showing the specific action of the emetine hydrochloride announced by Rogers ("Brit. Med. Jour.," June 22, 1912). The abdominal distress and nausea after the second dose he considers probably due to the liberation of autogenous toxins from the killed amebas.—Jour. A. M. A., Feb. 14, 1914.

Fissured Hands:

Aquæ Rosæ ..... f. ℥iijss
Glycerini Neutralis ..... f. ℥j
Acidi Tannici ..... grn. viiss
M.
Vanillini ..... grn. vijss
Olei Rosæ ..... gt. j
Adipis Lanæ Hydrosi ..... grn. lxxv
M. f. unguentum.
Mentholis ..... grn. xxij
Phenylis Salicylatis ..... grn. xxx
Olei Olivæ ..... f. ℥ijss
Adipis Lanæ Hydrosi ..... f. ℥jss
M. f. unguentum. —Brocq.

TREATMENT OF BURNS

The best remedy for the treatment of burns of the first and second degree, according to M. J. Breitmann, is 70 per cent. alcohol. As soon as possible after the accident, the affected part is placed in a bath of two parts of alcohol and one of water and then covered with a bandage saturated with this fluid. The pain is said to disappear rapidly, the inflammation to be checked and the vesicles to rapidly dry up. Where the vesicles are already open a slight burning will be experienced. The action of the alcohol is chiefly that of a dessicant, while its antiseptic properties will prevent later infections.—Therap. Monatshefte., Dec., 1913.

ADRENALIN IN OSTEOMALACIA

In a typical, recurring case of osteomalacia, H. v. Salis obtained remarkable results from the use of adrenaline, injected in doses of 0.5 C.c. daily, in two series of 9 injections each. After the fifth injection the patient could turn around in bed and sit up and after the ninth injection she was again able to walk and there was much less tenderness over the bones. Slight after-effects, in the form of cardiac palpitation, headache and tremor were present. The patient was finally discharged as cured and subsequent examinations showed no return of the symptoms, despite the fact that she had been ill for 16 years. In other cases it may be necessary to give more adrenaline; thus, some authors have given as many as 150 injections of 0.5 to 1.0 C.c. As a rule, larger amounts are better tolerated in the acuter stages of the disease. According to the author the use of adrenaline seems to be the most effective treatment of osetomalacia at the present time and is to be preferred to the use of the Röntgen rays.—Münch. Med. Woch., Nov. 18, 1913.

TREATMENT OF METRORRHAGIA

P. Dalché writes that in metrorrhagia in virgins, repeated dippings of the hands in very hot, almost boiling, water generally proves effective as a remedial measure. Rest in bed, with or without heliotherapy or exposure to sunlight, is indispensable. An icebag should be kept on the lower abdomen. Calcium chloride and opium may with advantage be used internally. Vaginal injections should be given first at room temperature, then cold; they are not indispensable, except to wash out clots that are beginning to undergo putrefactive changes. Thyroid preparations in moderate doses give good results; mammary or adrenal organotherapy also sometimes proves serviceable. Blistering over the liver brings about arrest of some refractory menorrhagias. Fresh animal serum or antidiphtheritic serum may be applied by the rectum, or administered internally, in a little sweetened water, before the menstrual periods. Radium and the X rays control ovarian activity, but there is danger of overstepping the limits of safe dosing and causing permanent sterility.—N. Y. Med. Jour., Feb. 21, 1914.

GASTRIC TETANY IN THE ADULT

W. K. Irwin reports thirty-nine cases of gastric tetany in the adult of which eleven recover. Every drug from calomel to the latest antiseptic was tried. Oddo recommended calomel as a purge every other day, and benzonaphthol in ½ grain doses every two hours as an intestinal antiseptic. Boas recommended the use of diuretics. Gibb used in the treatment of his cases hypodermic injections of morphine and atropine; internally he gave liquor arsenicalis, liquor hydrargyri bichloridi, and sodium salicylate. He also gave a purgative consisting of calomel, podophyllin and extract of belladonna with magnesium sulphate first thing in the morning. Pratt washed out the stomach with boric acid solution and injected morphine hypodermically. Oxygen was also administered, and ether injected hypodermically. Gordon administered 30 grains of potassium bromide and 15 grains of chloral hydrate, but as this had no effect he then gave chloroform, which gave relief for a short time. Numerous authorities recommend gastric lavage, but this is a rather dangerous procedure, as passing the stomach tube, even a soft one, very often induces a severe attack of tetany. Others have advised the patient to take a large quantity of water, followed by an emetic, but the author cannot find any case recorded in which this treatment has been successful. The only treatment up to the present that has given hopeful results is operation, but even this has not always prevented a recurrence of this grave disorder, as quite a number of cases have had attacks of tetany during the week following the operation. Rectal feeding for a week before the operation would, in his opinion, overcome this difficulty. The patient should have a dose of calomel and then a saline purgative every morning. Fifteen ounces of peptonized milk should be given by the rectum every six hours, and the bowel should be kept well cleansed by giving a saline or soap enema once every twelve or twenty-four hours, and about an

hoor before the rectal feed. Oral sepsis must be avoided by daily washing the mouth and cleansing the teeth and gums, and in order to prevent parotitis, at one time a serious complication in cases where rectal feeding has been necessary and food by the mouth had been prohibited, the patient should have a rubber teat to suck. By the above method the attacks become less frequent and less severe, and tend to disappear usually about the third or fourth day of treatment.—Brit. Med. Jour., Nov. 8, 1913.

ARSENOTRIFERRIN IN STOMACH DISEASES

Extensive experiments conducted by H. Ury with arsenotriferrin in stomach diseases prove conclusively that this preparation has no irritating effect upon the mucous membrane of the gastro-intestinal tract and may be given without hesitation 8 or 10 days after a hemorrhage from an ulcer. No pains, constipation or increase of hydrochloric acid will result. If the importance of a rapid regeneration of the blood in the case of bleeding ulcers be borne in mind, the value of this preparation will be evident.—Berl. klin. Woch., Jan. 5, 1914.

ON IODIPIN THERAPY

Heinrich Bosse recounts in detail the result of his seven years' experience in the intramuscular injection of 25 per cent. Iodipin-Merck. His technique is practically the same as that detailed by Höfler. When properly carried out, the injections cause no inconvenience even to sensitive patients. Three should be given weekly and not more than 200 C.c. of Iodipin should be used in one series of injections.

Iodipin is capable of producing extraordinary results in diseases of the heart and blood vessels, especially arteriosclerosis, angina pectoris, cardiac asthma, vertigo, and dysbasia, also in septic conditions. Bad results were never observed and the remedy practically never failed to act beneficially. In a case of mitral stenosis and insufficiency with a rapid pulse and severe occipital headache, all symptoms practically disappeared after six Iodipin injections. Another patient, suffering with a probable subphrenic abscess, complicated by pericarditis, pleurisy and marked cardiac weakness, was cured by iodipin treatment. A temperature curve presented by the author is of interest as it shows the gradual disappearance of fever in a case of gonorrheal sepsis, treated with iodipin injections.

Considering the unequivocal therapeutic results, obtained in certain septic conditions, iodipin is strongly recommended, especially as there is nothing to be lost by its use and often much to be gained. A great part of the curative action of iodipin must be attributed to the influence of iodine on the blood elements, as shown by the marked increase in leucocytes, a fact proven by experiment.—St. Petersburger Med. Zeitschrift, 1913, No. 21.

TREATMENT OF HEART DISEASE IN CHILDREN

E. Cautley writes that reference to standard works of a generation ago showed that the recognition of the frequency of heart disease in children was of comparatively recent origin. Modern methods of treatment were a survival, a modification, and an improvement on those of the past. Especially the improvement depended on the recognition of myocarditis and its results. To some extent treatment was modified by age, for in childhood the heart was a growing organ. Fortunately, the degenerative changes consequent on age, alcoholism, syphilis, and renal disease were extremely rare. Functional disorders were comparatively unimportant. It was urged that in many so-called functional cases the primary cause was myocarditis, a sequel of infective disease. Rest was the most important factor in treatment. Its duration must be in proportion to the degree of dilatation dependent on myocardial disease. It was important during rapid growth and in cardiac disorders at puberty, periods at which overstrain must be carefully avoided. The duration of rest differed in endocarditis, myocarditis, and pericarditis; it was most prolonged in myocarditis. Subsequently massage and exercises, passive and active, were useful. Nauheim methods and electrotherapeutics must be considered. In acute inflammations the older methods of bleeding, blistering, and mercurialisation were still used in a modified form. Blistering was of doubtful value in endocarditis and myocarditis, but appeared distinctly beneficial in pericarditis. Bleeding was used with caution. Mercury was of value if the liver became congested. The pill of digitalis, squill, and mercury had not been improved upon. Purgation was necessary in edema and backward pressure; and in all cases the bowels should be kept open by mild laxatives, such as senna. Diuretics were also needed, and their action could be assisted by dry-cupping over the kidneys. Attention was paid to diet in acute inflammations and in cardiac failure, to the limitation of fluid and salts in edematous states, and to the ordinary diet of compensated valvular disease. In the matter of drugs

the value of digitalis and its modern laboratory preparation was referred to. Formerly the infusion was thought the most valuable, now opinion was in favor of the tincture. Diuretin and theocin sodium acetate were comparatively modern drugs. Vaso-dilators were practically never required. Morphia, aconite, and belladonna might be of value. It was a matter for argument as to what was the value of salicylates in myocarditis and of iodides in inflammation. In pericardial affections the use of paracentesis and of drainage was considered, as well as the more recent operation of cardiectasis for adherent pericardium.—Lancet, Jan. 4., 1914.

ACTIVE INGREDIENT OF BECK'S BISMUTH PASTE

The surpising results in the closing of fistulæ obtained with Beck's bismuth paste are due, according to L. Warker, not to the bismuth but to the yellow petrolatum which is used as base. White purified petrolatum, according to the author, will never have the same effect. There are certain low hydrocarbons of an indeterminate nature present in the crude substance, which show a distinct, stimulating effect toward epithelium, and which are responsible for the eczema and epithelioma so often seen in those who constantly work with paraffine.—Muench. med. Woch., Dec. 2, 1913.

THE EFFECTS OF TARTRATES ON THE KIDNEY

W. E. Post, of Chicago, quotes the findings of Underhill, Wells and Goldschmidt as to the toxic effects of tartrates when experimentally given to animals and takes up for himself the question, whether they produce like injurious effects on the human subject? The dose given was from 2 to 6 Gm. and the protocols of a few of the observations are given in detail. Each voiding of urine was put in clean sterile bottles and placed at once in an ice-box. The test for albumin was by acetic acid and potassium ferrocyanide. The hydrogen on concentration was determined in some of the cases by means of indicators. The observations give no evidence that potassium and sodium tartrate in ordinary doses given by the mouth will cause albuminuria or cylinduria in the human subject or aggravate an existing nephritis. The findings, however, are consistent with those of Underhill, Wells and Goldschmidt when the size of the dose is considered. Large doses of Rochelle salts would, of course, have an element of safety in their cathartic action which would prevent absorption, but it is hard to suppose that a dose in man equivalent to the toxic dose in rabbits could be given, and the animal experiments impress on us the fact of the greater toxicity of medication given subcutaneously or intravenously.—Jour. A. M. A., Feb. 21, 1914.

ARSENIC TREATMENT OF SYPHILIS

In his new work on arsenic therapy in syphilis, V. Mentberger brings forward an abundance of evidence of the toxic action of salvarsan and shows that the after-effects of this drug can be explained easily on the theory of arsenical intoxication. The author holds that the various theories which have been advanced such as the endotoxin theory, the impure water theory, etc., are fallacies. He attributes the so-called "neuro recurrences" to the direct neurotropic action of salvarsan on the nerves which predisposes them to the further effects of syphilis. The toxic effect he attributes to the high percentage of arsenic (34 per cent.).

Of the 274 cases of death following salvarsan administration he divides into three groups: (1) Those due to the direct toxic action of arsenic; (2) those indirectly due to this, and (3) those in which the drug was used when there were contraindications. The first group comprises 31 per cent. of the total, and includes especially cases of hemorrhagic encephalitis, which as he points out, is known to occur after poisoning by arsenic and many other substances. Forty-one of the fatal cases occurred after the injection in non-syphilitic cases.

The author concludes that, although salvarsan is a useful addition to the therapeutics of syphilis, it cannot replace mercury and the iodides. He thinks it indicated in primary syphilis, with a view to abortive treatment, but holds that the abortion of syphilis cannot be proved till cases have been observed for at least ten years, and also because spontaneous cure may occur. He considers that it should be used also in secondary erosions, to cut short the period of contagion; in malignant syphilis, in severe cases of congenital syphilis, intertiary affections of vital organs, and in the rare cases which are refractory to mercury. He advises, however, great caution in its use, and strict observance of the contraindications, though these cannot unfortunately always be ascertained beforehand. Finally, he advises that the patient should always be informed "that salvarsan, even after numerous injections, does not cure syphilis, and that prolonged intermittent mercurial treatment is absolutely necessary afterwards."—Brit. Med. Jour., Feb. 21, 1914.

Prescriptions

Cerebral Anemia:

Spt. Ammonii Aromat.....f. ℥vj
Spt. Lavandulæ Comp.....f. ℥iv
M. Sig.: One-half teaspoonful every half hour until relieved.

—Blair.

Lupus Erythematosus:

Sulphuris Præcip. .....
Olei Cadini .....āā ℥ss
Ung. Zinci Oxidi.....℥ss
M. F. ung.
Sig.: Apply twice daily.

Enteralgia:

Dionini .....grn. viij
Tinct. Hyoscyami .....f. ℥ijss
Tinct. Capsici .....♏xxx
Spt. Aetheris .....f. ℥j
Glycerini .....f. ℥v
M. Sig.: Teaspoonful every two or three hours.

Prostatorrhea:

Ergotini Bonjeani .....grn. xlviij
Pulv. Cantharidis .....grn. iv
Ext. Nucis Vomicæ.....grn. iv
M. Div. in pil. No. xxiv.
Sig.: One pill three times daily.

Psoriasis:

Anthrasol .....
Hydrarg. Precip. Albæ.....āā ℥v
Resorcini .....℥ss
Ung. Aquæ Rosæ.....
Ung. Simplicis .....℥iij
M. F. unguentum.
This ointment is white and causes no untoward symptoms unless an idiosyncrasy for mercury exists.

—J. Schaeffer.

Orchitis:

After the first week the following may be applied locally:

Ung. Hydrargyri .....
Ung. Belladonnæ .....
Ichthyolis .....
Adipis Lanæ .....āā ℥ij
M. Sig.: Apply locally.

—Christian.

Epilepsy:

Bromipin .....
Syrupi .....
Spt. Menthæ Pip.....āā f. ℥iv
Mucil. Acaciæ .....ad f. ℥xvj
M. Sig.: One to three tablespoonfuls thrice daily an hour after meals.

—Spratling.

Chancroids:

The following dressing is recommended by J. W. Moore of Philadelphia:

Hydrargyri Chloridi Corros.....grn. 1/6
Zinci Sulphatis .....grn. ix
Acidi Borici .....℥j
Glycerini .....f. ℥j
Aquæ .....f. ℥vj
M. f. solutio.

Pulmonary Tuberculosis:

Guaiacolis .....f. ℥j
Spt. Vini Rect.....f. ℥j
Syr. Limonis .....f. ℥j
Spt. Chloroformi .....f. ℥ij
Aquæ .....ad f. ℥vj
M. Sig.: Dose, one-half ounce thrice daily.

—Mayberry.

Circumcision Wound:

Dean Miltimore, of Nyack, N. Y., writes that the following is an excellent application for circumcision after the first 24 hours. No bandage is required, the wound dries quickly and a scab is formed in a few hours.

Phenolis Liq. .....f. ℥ss
Magnesii Carbonatis Lev.....
Zinci Oxidi .....āā ℥ss
M. Sig.: Shake.

Gonococcal Arthritis:

Solovtzova has obtained good results in gonococcal arthritis by application of compresses moistened with the following:

Acidi Salicylici .....℥v
Alcoholis .....f. ℥viij
Olei Ricini .....f. ℥v
M. et f. solutio.

Lumbago:

The bowels should be kept open with a saline purgative and the patient should rest in bed if possible.

Salicini .....
Potassii Bicarbonatis .....āā grn. xv
Caffeinæ Citratæ .....grn. vj
M. et div. in chart. No. xij.
Sig.: One powder four times daily.

—Tribune médicale.

Threadworms:

The following injection is said to be efficient:

Acidi Salicylici .....
Sodii Boratis .....āā ℥ss
Aquæ .....O j
M. Sig.: Warm and inject into the bowel. For children reduce all ingredients by one-half.

Stimulating Liniment:

Spt. Ammon. Aromat.....
Olei Terebinthinæ .....
Lin. Camphoræ .....āā f. ℥j
Alcoholis .....ad f. ℥iv
M. Sig.: Apply externally.

—Med. Sentinel.

Mouth Wash:

Thymolis .....grn. iv
Acidi Benzoici .....grn. xlv
Tinct. Eucalypti .....f. ℥ss
Alcoholis .....f. ℥iv
Olei Menthæ Pip.....♏iv
M. Sig.: Mouth wash. One teaspoonful in a glass of boiled water.

Thymolis .....
Benzosulphinidi .....āā grn. iv
Olei Cinnamomi .....
Olei Caryophylli .....āā ♏iv
Olei Menthæ Pip.....♏xxiv
Tinct. Krameriæ .....♏xl
Alcoholis .....f. ℥iv
M. Sig.: Mouth wash. One teaspoonful in a glass of boiled water.

Benzosulphinidi .....grn. xv
Aquæ Destillatæ .....O ij
Solve.

—Hugenschmidt.

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MARCH, 1914

EDITOR'S NOTES

Effect of Arsenic on the Blood

R. v. Hoesslin (Therap. Monatshft., Dec., 1913) has shown that the effect of arsenic on apparent anemias, asthenic and nervous conditions is due to its influence upon the lymphatic system and shows itself in a decrease of the number of lymphocytes and an increase of the number of polynuclear leucocytes. Other changes in the blood-picture, such as an increase in the hemoglobin, red and total white cells, is less constant, though common. If the administration of arsenic be discontinued, there will usually be a return to the original condition. A second course of arsenic will then frequently fail in bringing about renewed improvement in the blood-picture. This corresponds clinically with the effect of arsenic in many of the blood-diseases. It is probable that the beneficial effect of the arsenical preparations in many of the so-called neuroses is due to their influence upon the ductless glands and the lymphatic apparatus. The dose generally employed in the cases observed was one milligram of arsenious acid three times a day, increased to four milligrams three times a day, then again decreased. A change was only rarely noticed before 7 or 8 weeks had elapsed. In one case, where the blood-picture was not influenced, the desired result was obtained after several intravenous injections of salvarsan. The subjective improvement and the change in the blood-picture usually went hand in hand and was most pronounced in the young. Many cases appeared anemic (owing to contraction of the peripheral vessels), though the percentage of hemoglobin and the number of red cells were normal. There was an absolute or relative lymphocytosis and iron had no effect. After arsenic medication, the lymphocytosis promptly disappeared and the color of the patients improved.

***

Treatment of Diabetic Coma

In the treatment of severe diabetes, particularly if associated with coma, the ingestion of large amounts of alkali plays an important role. This alkali may be given in one of four ways:—by mouth, rectum, intravenously or subcutaneously. The administration by mouth is the simplest method, yet is often impossible when the patient is in deep coma or where it gives rise to vomiting or diarrhea or over-distention of the stomach. The use of alkalies per rectum is generally unsatisfactory, while under the skin they not rarely give rise to disagreeable necroses.

In deep coma, therefore, the intravenous administration is selected, and a 4 per cent. solution of sodium carbonate is commonly employed. The results are usually satisfactory, but not rarely the intima of the vein is injured by the alkali with the formation of thrombi, which interrupt the free flow of the solution.

A. Magnus Levy (Therap. Monatshft, Dec., 1913) points out that the solution may be given subcutaneously, provided that it really contains sodium bicarbonate. Though this salt is used quite generally, the boiling necessary for proper sterilization converts it into the simple sodium carbonate. The blood-serum normally contains most of its soda as bicarbonate, which shows a neutral reaction in solution and is not irritating, while the carbonate is strongly irritating and alkaline. The problem, therefore, is to prepare a sterile solution of sodium bicarbonate entirely free from the irritating carbonate. This problem has been solved in the following ingenious way:

A 4 per cent. solution of sodium bicarbonate is prepared in the usual way, with the addition of a few drops of phenolphthalcine, which will cause no change in color. The solution is contained in a flask with rubber stopper, into which fit a thermometer, a bent tube almost reaching the bottom of the flask, and a straight tube almost touching the level of the fluid, as in the water bottles of all chemical laboratories. The solution is sterilized by steam,

when it will gradually assume a pink color owing to the escape of carbonic acid. After cooling, the sodium carbonate is again converted into bicarbonate by allowing carbonic acid to flow in until the pink color has disappeared. In this way an absolutely sterile solution of bicarbonate, free from carbonate, will be obtained. If stored for some time, the solution will gradually become pink again, but the use of carbonic acid will again restore it.

It has been proven by animal experiment that solutions prepared in this way are absolutely non-irritating and never give rise to necroses. As much as 1,000 C.c. may be injected under the skin at different sites, and if gentle massage is employed there is hardly any pain. No inflammatory symptoms, outside of slight swelling, will occur, and even this can be avoided if a 3 per cent. solution is employed. In more advanced cases an intravenous infusion, prepared in the same way, is to be preferred, since it acts more rapidly, but should always be followed by a subcutaneous injection. Where the patient can swallow, the alkali can also be given by mouth. Where there is cardiac weakness, the heart should be stimulated by the use of adrenalin, caffeine and digitalis where an intravenous infusion is contemplated.

THE SEDATIVE ACTION OF LUMBAR PUNCTURE

E. Szedlak has performed lumbar puncture in about 250 cases for diagnostic purposes, and has noticed that in most of these restlessness and excitement diminished or even disappeared. This led him to practice lumbar puncture as a purely therapeutic measure among the most restless inmates of a hospital for nervous diseases. Lumbar puncture is known to relieve the headache, somnolence, vomiting, and other disturbances following epidemic cerebro-spinal meningitis, tuberculous meningitis, and hydrocephalus, in which the intraspinal pressure is raised. It may be that in some cases this pressure is also raised in certain forms of insanity, and that the stimulus to which the cortex is subjected by this pressure can be removed by the withdrawal of some cerebro-spinal fluid. Again, if the mental symptoms be due to an accumulation of toxins in the cerebro-spinal fluid, a reduction of its volume should be beneficial. The author does not include in his report those cases in which a general anesthetic was given during lumbar puncture, as the resulting beneficial effects may partly be traced to the anesthetic. In most cases he dispensed with anesthetics, and when the patients were very restless he secured the pelvis with a cloth drawn downwards and backwards by two attendants, while a third attendant held the patient's head in his armpit so that the body of the sitting patient was carried forward as far as possible. Thus secured, even the most restless patient is not likely to break the needle. The intraspinal pressure was as high as 300 to 500 mm. or more in the most violent patients, and the liquor squirted forcibly out of the needle when it was opened. Not more than 10 to 15 C.c. were withdrawn at one puncture, lest the sudden reduction of pressure should be harmful. In some cases the immediate result was striking, the restlessness disappearing completely. Sometimes this effect lasted only a few days and a repetition of the procedure became necessary. No good effect was observed in a case of encephalopathic psychosis or one of alcoholic psychosis. In the first case the patient died after six days' continuous and severe psycho-motor disturbance. The necropsy showed a large hemorrhagic infarct of the right parietal lobe. No improvement was effected in a case of paranoia, but in most cases of restlessness in dementia praecox, psychosis epileptica and maniaco-depressiva, dementia paralytica progressiva and melancholia excellent results were obtained. The author gives details of seven cases in which lumbar puncture was very beneficial.—Brit. Med. Jour., Jan. 31, 1914.

ORGANOTHERAPY IN CHRONIC RHEUMATISM AND PSORIASIS

Léopold Lévi reports the case of a man of 72 in whom severe pruriginous psoriasis and mild chronic rheumatism had come on slowly in a period of seven or eight years after emotional distress, due to the loss of three children. The rheumatism was worst in winter; the psoriasis, in summer. The itching from the latter condition was continuous and prevented sleep. The circinate character of the lesions suggested the possibility of syphilis, but the Wassermann reaction was negative. Signs of hypothyroidism being present thyroid extract was prescribed with rapid benefit to the rheumatism but with none to the psoriasis. As the patient showed breasts of a somewhat feminine type, with sexual frigidity of six years' duration, and also hypotrichosis, the author, remembering that the testis is rich in sulphur and has a marked action on the skin, prescribed 3 grains of testicular powder daily with rapid benefit to the itching and psoriasis, and return of sleep.—Monthly Cyclo., Feb. 1914.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Test of Proficiency in Washing Bladder.—Dean Miltimore, of Nyack, N. Y., writes that when teaching a man with residual urine to wash his own bladder, the following is a good test of his proficiency:

The physician, having himself washed the patient's bladder, injects and leaves one-half ounce of a 5 per cent. argyrol solution. If the patient is reasonably skilful and careful in washing his bladder with boric acid solution, there will be no trace of argyrol visible in the sediment of the specimen obtained by catheterization at the end of twenty-four hours. If he is unskilful, little black particles of argyrol will persist in the sediment forty-eight hours or more.

The Active Ingredient of Carlsbad Water.—Bottled spring water and fresh spring water do not possess the same activity since changes in radioactivity and electrolytic disassociation are constantly going on which will result in gradual deterioration. It is likely, however, that some of this deterioration is also of a chemical nature. F. Schwyzer has carefully studied the waters of Carlsbad and finds that the fresh water is more effective in cholelithiasis than any other water, though its radioactivity and ionization are not any greater. It is characterized, however, by a higher percentage of fluorides, and these fluorides are gradually fixed or precipitated as the water is stored in bottles. It is very likely that at least part of the activity of Carlsbad water is due to these fluorides, and its deterioration is due to the gradual disappearance of these fluorides. The author recommends that the water be filled only in paraffined bottles and stoppered with a paraffined cork so that contact with glass and cork on storing is avoided.—Münch. Med. Woch., Dec. 2, 1913.

Nitroglycerin.—There has been but little literature regarding the effects of nitroglycerin on the workers in its manufacture during the last twelve years, says G. E. Ebright, of San Francisco. He quotes from an article and also a private communication by Dr. George E. Laws as to the maniacal excitement occasionally produced among these workers, and also as to its aphrodisiac effect and also the well known facts regarding the physiologic action. Observation of the working conditions among the employes of the Dupont Powder Company at Hercules, Cal., showed that occasionally a workman was found who was immune to the action of the drug, but this is a very rare exception, and the degree of exposure required to produce the characteristic headaches varies with the individual, with the weather and the accustomization. A new man is very susceptible and warm weather aggravates the symptoms. After three or four days a considerable degree of immunity is produced, but the symptoms may still appear from excessive exposure. The immunity, however, is rapidly lost and the absence from the work fo a couple of days is sufficient for this. It is a common practice among the workmen to put some nitroglycerin on their hat-bands during periods of absence from the factory in order to maintain their immunity. A characteristic symptom is a throbbing headache; this is often so severe as to cause loss of sleep, but he did not observe maniacal attacks in his examination. Permanent effects seem to be lacking. The general health was uniformly pretty good and there were no evidences of destructive blood-changes. Alcohol aggravates the symptoms by relaxation of the blood vessels. A case to the point came to his notice: A foreman of an excavating force handled a large quantity of dynamite, and following advice took some whisky to relieve symptoms produced, resulting in an attack of homicidal mania. No evidence of a nitroglycerin habit was noted, but he mentions the habit of cordite-eating observed among British soldiers. The natural dread the workers in nitroglycerin have of the headaches produced precludes any likelihood of the acquiring of a pernicious habit. As far as the limited number of cases afforded an opportunity to judge, there was no evidence of any cardiovascular changes of any importance, and long continuance at the occupation seems compatible with general health. —Jour. A. M. A., Jan. 17, 1914.

The Use of Oil of Orange in Anesthesia.—When the ether employed in anesthesia is combined with the oil of orange, the patient may be anesthetized with less discomfort, with no preliminary stage of excitement, and with the consumption of about one-half the quantity of ether that is otherwise required; there is also a speedy recovery from the anesthetic state, without nausea or vomiting.

This was shown by Gwathmey several years ago. In a recent publication, Jarvis (Monthly Cyclo., Jan., 1913), after certain experiment, concludes: (1) That essential oil of orange enhibits nasal reflexes, elicited by ether alone; (2) the inhalation of the oil of orange previous to the inhalation of ether (for three minutes) suppresses the reflexes of dilation of the lungs and stomach that is produced by ether vapor.

The technic of the administration is to allow the patient to inhale the oil of orange from the ordinary mask for a period averaging about three minutes before the commencement of the administration of the ether. When the ether vapor is commenced it is combined with the oil of orange vapor in the proportion of one ounce of the essential oil and one ounce of water contained in a separate bottle that is connected with the ether vaporizer.

If the above results are thus obtainable—and we have no reason to believe otherwise—it becomes essential that every person administering ether as an anesthetic should employ this adjuvant. Every method that has a worthy claim to being an agent that will enhance or reduce to a minimum the dangers that are connected with the production of the anesthetic state should be employed on every occasion where ether is exhibited as the drug of choice. Even though ether is conceded by the majority as being the safest anesthetic, it is our bounden duty to render it more safe if we can possibly do so.

We would recommend that Gwathmey's suggestion (Jour. A. M., Nov. 23. 1912): (1) The preliminary administration of morphine and atropine or some similar drug or combination; (2) commencing the anesthesia with two to four drops of the essence of orange (25 per cent., U. S. P.); (3) the drop method of anesthol until the patient reaches surgical anesthesia, and then a change to the drop method of "vapor anesthesia;" be used by those who are employing ether as their anesthetic agent of choice.—Jour. Mich. State Med. Soc.

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Patient—Doctor, can't you diagnose my case? Can't you tell me what is the matter with me?

Doctor—Madame, I regret to inform you that I cannot. Nothing short of an autopsy will reveal that.

Patient—Then go right ahead with it, doctor; this is no time for me to display false modesty.

The Eugenical Child.—The laws of heredity are but lamely understood at present, and, for that matter, will never enjoy so perfect an interpretation that anyone shall be in a position to say he is prophet as to the outcome of carefully laid plans. We undoubtedly want healthy children in this world, and this depends greatly on the parentage. But to have healthy children we need not go to the lengths of the eugenists who imagine that just because the man is free from syphilis, or, as they so poetically express it, "from all hereditary taints," and the woman has rosy cheeks and broad hips and a vitality that is unquestionable, the child resulting from such a union must be a Hercules with a mentality that has not a smithereen of abnormality to abase it. But, even granting that men and women dowered with strong muscles, strong nerves, healthy and optimistic views of life are the right sort of parents for eugenical children, will not the will-o'-the-wisp, heredity, play the world a trick none too seldom, and prove again and again its utter irresponsibility? Just as likely as not the eugenical child will surprise the circle of eugenists who are watching his development and turn out a Poe, a Baudelaire, or a Francis Thompson, the very mention of whose names sends a shiver down the spines of the eugenic gentry. The medical man of to-day who has made a study of the various facets of life, while not opposed to the eugenical movement in its milder phases, is not enthusiastic about the eugenical child because he sees underlying fallacies and knows the things that are beyond human power.—Interstate Med. Jour.

Venereal Prophylaxis.—Now that such good results are reported by the army and navy medical officers from the use of the prophylactic packet in the reduction of venereal incidence among men, it is time that similar methods were employed elsewhere. The plea that the teaching of these prophylactic measures increases immorality is too theoretical and problematic to deserve much more than passing attention, in the face of the actual harm done by diseases which could have been prevented by these measures. If only those infected through immorality were concerned we might be tempted to let them "take their medicine"—though even such a way of thinking is not worthy of modern civilization—but the greatest sufferers are the innocent victims of these diseases, infected directly or indirectly, or through heredity. Venereal diseases, when once established, have a tendency toward permanency, whereas immorality is a changeable factor, varying with the society and with codes of morals. Besides, no cases of ophthalmia neonatorum or congenital syphilis have ever been reported as a result simply of a breach of the moral code. The longer one reflects on the proposition that it is immoral to prevent disease, the more preposterous does it appear. It is our obvious duty as medical men to stamp out disease wherever we find it; therapeutically if necessary, prophylactically if possible. From any enlightened viewpoint nothing could be morally more indefensible than to permit any infection to ravage the community, and if this has occurred in the past it is because our hands have been tied by the concealments of the victims, some innocent, some afraid.—N. Y. Med. Jour.

An Important Discovery.—William David Coolidge, of New York, has devised a new method for the generation, control and application of Roentgen rays which is likely to prove of great importance in their medical use. His invention consists of a tube in which both anode and cathode are made of tungsten, and by means of which the penetration and dosage of rays may be most accurately gauged. The advantages claimed for it are as follows: (a) The intensity and the penetrating power of the Roentgen rays produced are both under the complete control of the operator, and each can be instantly increased or decreased independently of the other. (b) The tube can be operated continuously for hours, with either high or low discharge currents, and as either a hard or a soft tube, without showing an appreciable change in either the intensity of the penetrating power of the resultant radiations. (c) It permits of the realization of intense homogeneous primary Roentgen rays of the desired penetrating power. —Boston Med. and Surg. Jour.

The Comedy of the Certificate.—Every one who has been called on to write a testimonial or certificate knows how difficult it often is to reconcile a proper regard for truth with the interest of the person on behalf of whom the document is written. An illegible handwriting may be useful. It is said that a letter of Horace Greeley, the famous journalist, dismissing a member of his staff, was successfully used by the person to whom it was addressed as a recommendation to any able editor in need of a competent assistant. Odder certificates than this have, however, been used by enterprising persons. Candidates for French degrees can often get exemption from some of the necessary examinations on the production of certificates obtained in their own country, which are accepted as equivalent. The documents required are issued at the office of the Enseignement Supérieur in the Rue de Grenelle, Paris. Some time ago, according to the Cri de Paris, a young Egyptian presented himself there with a recommendation from an important political personage and handed in an imposing-looking document in Turkish, ornamented with a number of crescents and arabesques and other Oriental decorations. The ingenuous youth explained that this was a diploma from the University of Cairo, granted only to its best pupils. He was told it would be translated. He objected that he had not time to wait, and that he required the equivalent document to enable him to get an appointment for which a French diploma

was required. The political personage's name was accordingly accepted as a sufficient guarantee and the necessary papers were issued to the applicant. A few days later the Turkish document was translated and was found to be a shooting license, and, to make the thing complete, one that had expired. A still more daring exploit in the misuse of certificates is recorded in the Gazette Hebdomadaire des Sciences Médicales. A student of the Val-de-Grâce, the French army school of medicine, after a number of breaches of discipline, was sentenced to expulsion. The decision was conveyed to the culprit in an official letter stating that he had been dismissed. (licencié). But the young man was clever enough to turn the instrument of his disgrace to favour and to prettiness by describing himself on his cards as "Licencié (Licentiate) du Val-de-Grâce"!—Brit. Med. Jour.

Hypochondriasis.

"Good morning, Mrs. McCarty!" said Mrs. Ryan, as the friends met at the market. "How's all the folks getting along?"

"They all be doin' well," replied Mrs. McCarty, "except my old man. He's been enjoyin' poor health for some toime, but this mornin' he complained of feelin' better."—The Youth's Companion.

Popular Beliefs and Scientific Facts.—Popular beliefs on scientific subjects apparently run in waves. Many of our readers remember the interest in hypnotism which followed the publication of "Trilby." Svengali with his "hypnotic eye" at once became a real and possible personage in the public imagination. The newspapers were full of stories of girls and women who had suddenly been fixed and paralyzed by the hypnotic gaze of some mysterious stranger with piercing black eyes and who had been compelled by his will to fantastic acts which they were powerless to prevent. Fiction writers took up the idea, and stories centering around hypnotic influence became common. It was used as a plea in criminal cases, various culprits alleging that they had been hypnotized and compelled against their will to perform unlawful acts. All this occurred in spite of the fact, frequently stated and known by every scientific man, that the limitations of hypnotism are definite and well recognized; that no person can be hypnotized unknowingly against his will, and that few persons are so susceptible as to be capable of being compelled to perform acts beyond their own volition and knowledge.

Another popular fiction which later on took the place of hypnotism was that of instantaneous anesthesia. Stories appeared in the newspapers of women who had been accosted by strangers and, under some pretext, had permitted a cloth or a handkerchief to be pressed momentarily over their mouth and nose. Immediate unconsciousness was said to have followed, resulting in a period of insensibility and irresponsibility, varying from a few minutes to hours or even days. Chloroform sprayed into an open window by means of an atomizer, anesthetics tied to a rag on the end of a pole and thrown into a bedroom, instant unconsciousness following the administration of drugs unknown to physicians and pharmacists, were some of the variations of this idea. In the minds of physicians and nurses who see every day the administration of anesthetics, such stories only excite mirth. Any one who knows the difficulty and labor of securing unconsciousness through the use of anesthetics, even under the most favorable conditions and with every possible means of restraining and controlling the patient, knows how absurd such stories are.

A later-day variation of these popular beliefs may be found in the "poisoned needle" stories which have been going the rounds of the press recently. A woman goes to a moving picture theater, enters a crowded elevator, a street-car or elevated train, or is caught in the press of a crowd. Suddenly she sees, close beside her, our old friend the "mysterious stranger," with the piercing black eyes and the compelling manner. At the same time she feels a sting and knows that she has been stabbed with a poisoned needle. She immediately becomes unconscious, dazed or irresponsible for a greater or less period of time, during which she experiences a number of marvelous adventures or hairbreadth escapes.

It is not possible to say that no woman was ever without her knowledge given a drug hypodermically which produced unconsciousness. It can, however, be said very positively that there is no drug known to scientific men which could be administered in the manner or which would produce the effect described in recent newspaper reports.

One of the laws of hysteria is that when any peculiar phenomenon is reported, similar instances immediately appear throughout the country. We may now expect a spring crop of magazine stories and popular novels based on the poisoned needle as a motive. Scientifically, the thing is as ridiculous and impossible as hypnotism of an unwilling subject or instantaneous anesthesia. Popular beliefs travel in waves, and hysteric and excited imaginations help them along. The history of popular delusions, from Salem witchcraft to present-day vagaries, is full of such instances.—Jour. A. M. A.

The Methods of the Quack.—A startling story of the methods of one quack, an obesity specialist, is being told where physicians gather. It appears that a lady interested in reducing her weight paid a visit to this man, and after the usual preliminaries laid down the fee of fifty dollars. In return she received from the specialist a small capsule, which, he said, comprised his entire treatment, with instructions to swallow it forthwith in his presence. Her suspicions being aroused, the patient managed by some sleight-of-hand to convey the capsule into her muff, although she pretended to swallow it. Having safely

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recrossed the North River, the lady hastened to her family medical adviser in New York with the mysterious capsule. The physician who has not heard the story will be most unlikely to guess what the microscope disclosed to be the contents of this obesity remedy; it was nothing more or less than the scolex or head of a tapeworm, whether *Tænia* or *Dibothriocephalus* our informant does not state. The villainy of such therapeutics is not in the least beyond the capabilities of the average quack, but a weak point of the story, to our mind, lies in the possibility of the existence of a source of worm heads sufficiently large to afford an income attractive to a quack. Another point is, would the scolex of a worm as it exists in the human host be required, or would the embryo, the cysticercus from beef or pork, be needed to do the work? Has the quack perchance, in deciding to use this worm as a bait for suckers, found a method of cultivating it outside of an animal host? These points must be cleared up or we shall have to relegate a promising story to the marines or other audience of historic credulity.—Exchange.

Diseases due to chronic infections of the orifices of the body were described some time ago in a remarkable article by P. Daniel. The subject now assumes enormous importance on account of the more recent relevations as to the serious after-effects of intestinal autointoxications following infections derived from the mouth and adjacent parts. Lane asserts that these local infections are generally secondary to toxemia from intestinal stasis, and that if the toxemia is cured the local disease—gingivitis, for instance—disappears by a restoration of our natural resistance to all our bacterial messmates. All the orifices swarm harmlessly with bacteria until we lose resistance from some kind of poisoning. Daniel takes the opposite ground that the local affection is primary, and that a cure of the local disease is followed by the disappearance of the general condition. Perhaps both are right—at any rate, each is accomplishing phenomenal results by attacking one cause.. Our interest in Daniel's work is due to the fact that Americans have for many years been calling attention to the disasters which follow long continued toxemia from such conditions as suppuration in the gums, antrum, sinuses, vagina, urethra, etc., and it has been a routine to examine for a local suppuration somewhere to clear up obscure cases. Daniel shows that the British profession has almost completely ignored these causes of chronic diseases and that students are not even made aware of these conditions which do the "spade work" for a later planting of tubercle or typhoid bacilli. Not only is the toxemia to blame for all kinds of after-effects—from arthritis to insanity—but the organisms themselves migrate and may lodge almost anywhere, and other invaders may appear in the weakened body. Darling found that 92 per cent. of persons dying of pneumonia had an older nasal sinusitis; Fish found empyema of the antrum of Highmore in the majority of those dying of measles and scarlet fever; and Weichselbaum found empyema of one or more of the sinuses in twelve influenza autopsies. The results of sepsis may be goitre, neuritis, arthritis, heart disease, general ill health and hysteria, crises of tabes, Charcot's joints, perhaps eclampsia, nephritis, exophthalmic goitre, Henoch's disease and certain glandular affections. Even in cancer it is a factor, and this long list does not include all the things Daniel mentions. There will be great skepticism as to the wisdom of making such sweeping generalizations, but it will be criminal not to act upon the suggestion and cure up all local chronic infections even if we must extract all the teeth in cases of Rigg's disease which do not respond to treatment. If we take care of these pennies, the pounds of ill health will take care of themselves—that is, the mild and often overlooked trivial complaints are really destroying lives of men who do not know that anything is wrong, and the cure of some minor pus focus which is industriously poisoning the whole system, may cure a baffling general conditions in some patient whom we are apt to condemn to life-long suffering as an incurable neurasthenic. Nothing can be more important, then, than to search for chronic pus foci and cure them.—American Medicine.

Making a New Serum.

Old Doctor Concocter grew thoughtful one day—
"I will dope out," says he,
"A serum or three——
Some terrific specific will probably pay!"

A cynical, clinical kind of a gink,
He loved to give rabbits
Horrible habits:
He would garrote a parrot as quick as a wink,
And doggies and froggies, he taught 'em to drink!
Guinea-pigs, widgeons,
Pollywogs, pigeons,
They would tremble when he would come near 'em,
For he gave 'em diseases,
And studied their sneezes,
And he threatened 'em daily he'd turn 'em to serum!

With a second-hand Mesopotamiam mump
He had set out to hatch years before in the hump
Of a very contrary, old, lumpy old camel—
A grumpy, old, frumpy, old, bumpy old mammal—
With a measle a weasel had used and got through with,
Some cultures some vultures had turned rather blue with,
With an ailment a cat had regarded
As rather worn out, and discarded—
With some odds and some ends of our animal friends
That he never had known what to do with,
Old Doctor Concocter fixed up a new serum—a baby-blue serum.

Says Doctor Concocter: "A winner for sure!
I'll organize quick and peddle some blocks
Of perfectly probable medical stocks—
After which I'll find out what this serum will cure!
If it doesn't cure fever 'twill maybe cure scabies,
Bronchitis, neuritis, botts, glanders or rabies;
If it doesn't cure ague 'twill maybe cure pip.
If it doesn't cure dandruff 'twill maybe cure grip—
For all that I know 'twill drive bunions away!
But it's certain to pay—
If it's properly pushed it will certainly pay!"
—Sun.

The School Girl "Crush."—The affectionate relationship so often existing between school girls at boarding schools is the subject of an inquiry by Douglas C. McMurtrie in the American Journal of Urology.

One girl conceives an enthusiastic attachment for another and there are observable in analogous form all the elements of heterosexual courtship. Such relationships are colloquially known in this country as "crushes," in England as "raves" and

in Italy as "flames." Their occurrence is almost universal among institutions for girls in the adolescent period, but there seems to be no exactly comparable phenomenon among boys of a similar age in similar circumstances.

The relationship in question is of great importance, because it exerts in a large number of cases a vital influence over the girls concerned—in many instances the most weighty influence bearing at the time upon the developing character. This being the case—and the truth of the preceding statement cannot be doubted—the subject should receive most careful attention at the hands of educators. Several questions demand determination. Is the manifestation beneficial or harmful? To what extreme does it go and in what degree is it susceptible to suppression or control? If it is inevitable, how can the resulting influences best be moulded and directed?

Yet this important phenomenon, well known as it is, has received practically no scientific study. Every school teacher dealing with girls must have made first-hand observations regarding it, but few of these have been recorded in the literature. I have spoken to several principals of schools where I knew "crushes" to be rampant, yet all of them disclaimed the existence of such infatuations in her institution and pleaded ignorance regarding the phenomenon. They had heard, however, that such things existed in other schools. All of them seemed to have a feeling of shame over the matter; whether this was due to the apparent silliness of the relation or to an instinctive apprehension of danger, it was impossible to determine.

To say the least, the matter seems to be of great pedagogic importance, and the object of the present mention is to urge some first-hand studies of the question by those dealing with school girls addicted to crushes. It is not possible at this time to make an exhaustive review of the subject, but for the benefit of those interested—and there should be many—a brief summary of the facts may be set forth.

The phenomenon of the crush has undoubtedly a sexual basis. It is synchronized accurately with the adolescent period, and the infatuation with another girl is often the first social manifestation of the dawning sexual impulse. Being directed towards another girl it is, of course, of a homo-sexual character. In the majority of instances, however, the relations are of a spiritual nature only, so this latter circumstance need not be too seriously regarded. It is well, however, that educators should know that in some cases these school-girl infatuations lead to physical relations. Such situations should naturally be guarded against. The salient feature of the relationship is its temporary character. It is of short duration only, being usually terminated by the entrance of some young man into the emotional life of one of the girls. This influence transcends the other and displaces it. We are thus led to conclude that the universality of the phenomenon is due to the need of an objective focus for the direction if not of the gratification of the sexual impulse. Affectionate regard for another girl seems, therefore, largely *faux de mieux*.

In the present state of knowledge, the crushes do not seem to have a harmful effect upon the girls concerned, though any conclusion on this subject at the present time must be tentative only. It is clear, however, that the manifestation is fraught with several dangers which can be intelligently avoided only by an understanding of the conditions involved. An intimation of these dangers may be gleaned from the prevalence of

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inversion in various *internats* and convents. There devolves upon educators the duty of throwing more light on this important subject.—Medical Standard.

Senility.—Dr. William Brady, of Elmira, N. Y., writes in characteristic style:

Old age is a relative state; that is to say, a doctor himself never grows senile—in his own estimation; with his patients, however, it is often otherwise, and with his colleagues likewise.

There was the classical case of old Dr. Hammersmith, for instance. Dr. Hammersmith had the saving grace of optimism, but circumstances beyond his control proved too much for him. A congenial group of his friends gathered at his home on the occasion of his fortieth birthday, intending to give him a pleasant little surprise. But when they got there it was the doctor himself who sprang the surprise, for they found him in a joyous, hilarious mood, though it was only half-past nine o'clock.

However, everybody sat down at the table without waiting for any urging and sailed right in, after the manner of our fearless profession when there are good things to eat and drink, and by eleven o'clock the evening was, so to speak, humming along right merrily. At the final stroke of eleven on the doctor's fine old $16.50 hall clock, just as Jordan launched into a detailed clinical report of his last empyema, in bounced the doctor's buxom young wife (third in the line, I think) with face aglow and a birthday cake all dressed up with forty gleaming candles.

Of course everyone applauded and called for a toast. The doctor rose slowly, looked at the cake, rubbed his eyes in a dazed, uncertain way, and looked once more. The happy smile faded from his gleaming countenance, he turned a ghastly color, clutched at his heart and toppled over into the arms of the guest at his left.

The coroner certified that death was due to senility superinduced by diplopia fugitans; contributing cause, the birthday cake.

In the writer's opinion, senility is wholly a matter of how you feel. There are days when you feel as old as Noah, with Methuseleh doddering anxiously on before. And then there are other days when your friends conspire and greet you on all sides with a "Why, how do you do, Henry? Say, but you're looking fine! Isn't this great weather, though? Come have a glass of buttermilk, do!"

I used to take pride in estimating my adult patients' ages by palpating their radial arteries. Sometimes I could guess as close as a decade to their chronological vintage just by feeling the degree of sclerosis present. But I found this honesty a very poor policy. At present I guess at least two decades less than the blood pressure indicates, and I do it so seriously and so positively that patients who formerly declared my treatment worthless now make wonderful progress on my nerve tonic.

Bad psychology makes more senility than our treatment does, I firmly believe. Bad psychology has a killing effect. Once let a white old man or a gray old woman absorb the suggestion that old age is a pathological condition accompanied with definite chronic symptoms, and no treatment you can devise will ward off those "cold gradations of decay" that blight the cheer of so many firesides.

Never, never ask a person past middle age how old he is. And never, never, never admit that any symptom, no matter what it may be, is due to senility. Such things are on a par with the folk medicine that deals with the "change of life." If there is no other way, tell the complaining patient he will outgrow it, and assure him you are perfectly serious.

Before we create a new specialty under the title of "geriatrics" we must establish the pathopoiesis of infancy, puberty and adolescence. Then let us say, if we can, where geriatrics shall begin, and what disease entities, if any, are peculiar to senility.

Optimism of the highest order and an utter ignorance of geriatrics are the essentials of success in the treatment of the aged. Cells and tissues never grow old; minds and habits do. And we can influence minds and modify habits. The true specific for senility is—ignore it, and practice medicine.—N. Y. Med. Jour.

Chronic Glandular Enlargement.—For many years Iodia (Battle) has been a favorite agent in chronic glandular enlargement, owing to the distinct alterative influence it is capable of exerting. In such conditions there is a clear indication for iodine, and this is furnished the tissues through the administration of Iodia. The therapeutic value of this drug is augmented by the active principles of such well known vegetable alteratives as stillingia, helonias, saxifraga fraga and menisperum. (Battle & Co., St. Louis, Mo.)

Uterine Rupture.—Enlargement of the field of cesarean section is one of the advances in modern obstetrics, says L. I. Breitstein, of San Francisco. The operation is being performed now for other indications than contracted pelvis and the results are generally good. The question as to what should be the later course of cesareanized women arises, and the consensus of opinion is that they should not be sterilized. With this question in mind, he reports a case of a woman who had a cesarean section performed at term owing to a large hemotoma obstructing the pelvic canal. Subsequently, under his care, she passed through a normal pregnancy and delivery. Still, later, however, she came again under his care from a ruptured uterus, which was operated on and a dead fetus removed. There were certain peculiar features of the case. There was a comparative absence of symptoms and those present were mild. The patient did not think much was the matter with her at first and sat up and walked about while the intact bag of waters containing the fetus was free in her abdomen, and the true condition was not ascertained until the emptiness of the uterus was discovered by the finger through the os. Breitstein discusses the uterine condition in such cases as found in the literature. The rupture may not be in the locality of the scar, but may occur in the uninjured uterine tissue, made thin by interference with its circulation. If there is no infection the scar may hardly be ascertainable, but the case is very different if union by first intention does not occur. The following are the conclusions of his paper: 1. A cesareanized woman who gives a history of an infection with a purulent vaginal discharge in the puerperium is a good candidate for rupture of uterus in one of her subsequent pregnancies. 2. The mere fact that a cesareanized woman has delivered herself spontaneously is no reason for believing that she is free from the danger of rupture of the uterus with her future pregnancies. 3. Rupture of a cesarean-section scar generally takes place in a scar resulting from improper wound-healing in the presence of infection. 4. The implantation of the placenta on the site of the scar may so weaken the uterine tissue

that it may rupture under the strain and stress of labor. 5. I firmly believe that cesarean section should be limited to those cases in which it is strictly necessary. If there is any possible chance for the uterine wound to become infected, some operative measure for sterilizing the patient should be employed. 6. A cesareanized woman should be in a maternity hospital during the last month of her subsequent pregnancy so as to be under constant medical supervision.—Jour. A. M. A., Feb. 28, 1914.

THE PHENOMENA OF INFECTION.—Victor C. Vaughan, of Ann Arbor, Mich., contradicts Doerr's statement that bacteria have a relatively simple molecular structure, and asserts that all infecting agents are living proteins capable of growth and multiplication. He says that their pathogenicity depends on their ability to grow in the body, their rapid multiplication and wide distribution leading to acute systemic disease, and their slow or localized growth leading to chronic or localized disease. A new ferment may be formed or an old one modified by which the body is protected against certain diseases, such as smallpox.

Vaughan is convinced that infective bacteria contain an intracellular poison common to all proteins, and that the poison which kills in all infectious diseases is the same; but the specificity of the bacteria lies in the non-poisonous groups, and the symptoms differ according to the organ or tissue in which the poison is liberated through the splitting up of the virus, which cleavage is due to a specific ferment.

By means of animal experimentation Vaughan became convinced that the disastrousness of the results of an infective disease is determined by the rapidity of the growth of the virus and the amount of accumulation of foreign protein at the time of effective sensitization. He says that, as Gamaléla concluded, twenty-five years ago, the febrile process is the result of the reaction of the organism against the bacteria and not of bacterial action.

Vaughan has produced experimentally in animals, acute, remittent, intermittent and continued fevers and their accompaniments. Protein fever, he says, which includes practically all clinical fevers, is a result of parenteral protein digestion, in which the animal cells furnish the ferment. We are immune to most bacteria and protozoa because they are destroyed, as soon as they enter the body, by the non-specific proteolytic ferments probably secreted by the leukocytes, and normally in the blood and tissues. A protein not thus disposed of is deposited in some tissue or organ for which it has a predilection, such as the pneumococcus in the lungs. The time of development varies with the sensitizing protein. Solution of the problems of the conditions affecting a fever awaits further research.

He gives the evidence for and against this theory, drawing from the facts presented the conclusion that, although the exact chemical structure of the poison produced by the disruption of the protein molecule by chemical agents is not known, and though it has not been proved that the poison formed *in vitro* is identical with that formed *in vivo*, yet they are closely related, as is inferred from their physiologic action. He warns that, since every unbroken protein contains a highly poisonous group, serum and vaccine therapy should be carefully used. He protests against classifying toxins and anaphylactogens together as "antigens." The fact that tuberculin, according to most investigators, either does not sensitize or does so imperfectly raises a question as to its usefulness in therapeusis, though it is an excellent diagnostic agent and through the tolerance established by it to the tuberculopoison should be used unless the more completely isolated poison is preferable.—Jour. A. M. A., Feb. 21, 1914.

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SILVER IN ANTIQUITY.—Silver became known to the ancients after they had long been familiar with gold, a circumstance to be attributed to the fact that it is isolated from its ores with more difficulty than is gold. Nevertheless it was used in the most remote historic periods known to us. The Babylonians and Assyrians were acquainted with it, and the Israelites employed it in coinage under the name of keseph. In the time of King Solomon, Strunz tells us, silver was so plentiful that its market value declined. The Egyptians probably derived their supplies of silver from Spain through the Phenicians. An alloy of silver and gold was known to the Egyptians by the name of asm; this contained from 20 to 25 per cent. of silver, and received from the Greeks the name of elektros, later Latinized into electrum. Elektros must not be confounded with elektron, which was amber and found to possess the property of attracting light particles of pith and other substances after vigorous rubbing, and which has given us our modern word "electricity." The Greek name for silver is "argyros," derived from "argos," shining, whence the Latin argentum. Pliny says that "silver is never found but in shafts sunk deep in the ground, there being no indications to raise hopes of its existence, no shining sparkles as in the case of gold. The earth in which it is found is sometimes red, sometimes of an ashy hue. It is impossible, too, to melt it (i. e., the silver ore), except in combination with lead or galena, this

last being the name given to the vein of lead that is mostly found running near the veins of the silver ore. When submitted, too, to the action of fire, part of the ore precipitated itself in the form of lead, while the silver is left floating on the surface, like oil on water," and he goes on to tell that silver is found in nearly all the Roman provinces, but that the finest is derived from Spain. The separation of silver from gold, in which a chemical process is involved, was not known until the beginning of the medieval period.—Medical Fortnightly.

Tobacco Smoking and the Circulation.—It cannot be said that there is a dearth of literature on the relation of tobacco smoking to health. The data available are, however, tinged in large measure with all manner of biases. The circulatory mechanism of man is continually played on by conflicting impulses, so that the conditions of blood-pressure and pulse-rate that prevail from time to time may be the outcome of regulatory influences and directive forces so diverse and changeable as to defy the powers of immediate interpretation. Here, as elsewhere in medicine, many an error of conclusion has been committed because of inability to distinguish the causal factor from a large number of variable agencies. John, of the clinic of Volhard at Dortmund, has made a recent study of the influences of tobacco smoking on the circulation. The question at issue involves the effect on the blood vessels of continued smoking to a degree not productive of obviously toxic phenomena. Aside from the alkaloid nicotin, the other constituents of tobacco smoke are without toxic importance in the concentration and under the conditions in which they are ordinarily manifested in smoking. John finds that the smoking of two "medium" cigars evokes characteristic alterations in arterial pressure in typical cases. Even during the act of smoking there may be evidence of undeniable rise in diastolic pressure, and the effect may persist for as long as two hours. The essential feature in the nicotin effect on the vasomotor apparatus consists in a constrictor stimulus to the vessels which results in increased tonus. The behavior of the pulse-rate is variable. Eight or ten Russian cigarettes give a vasomotor result comparable with two "medium" cigars. Cigars of low nicotin content do not produce a recognizable effect on the circulation. The smoking of many cigars or cigarettes during the course of the day is by no means negligible, according to John's researches. The widely current impression that nicotin can produce vascular alterations in the sense of sclerotic changes is thus confirmed—Jour. A. M. A.

A Sedative of Distinctive Value.—The particular points about Pasadyne (Daniel) that give it a distinctive value as a sedative and calming agent are its freedom from immediate evil effects and also the possibility of addition. In therapeutic potency Pasadyne is easily the equal of other agents of its class, a fact that has been practically demonstrated by hundreds of clinicians. For the production of sleep and to soothe a highly excited nervous organism it will be found to possess a distinctive value. A sample may be had by addressing the laboratory of John B. Daniel, Atlanta, Georgia.

The Microscope in Medicine.—Professor Sims Woodhead, in his recent presidential address to the Royal Microscopical Society, discussed the subject of the microscope in medicine. He recalled the post-mortem examinations undertaken by Antonio Benivieni (died 1502) and Morgagni (1682-1771), whose work on the causes of disease opened up the way for the microscopist. He also spoke of Leeuwenhoek and his extraordinary work, remarking that in these days of biological chemistry and of theories of immunity men are apt to forget or to lose sight of the path by which we have arrived at our present stage. No great advance had been made as regards knowledge of the functions of the human body until accurate information had been gained as to their structure, first with the aid of the scalpel and then with the microscope. Cornelius Drebbel is said to have brought the first compound microscope to England from Holland in 1619. Robert Hooke, who first applied the microscope to the examination of the minute structure of plants in 1677, discovered the vegetable cell. In 1658 Jan Swammerdam apparently observed red blood corpuscles. Malpighi (1628-1694) demonstrated the truth of Harvey's theory of the circulation of the blood by tracing its course through the capillaries of the lungs and from one chamber of the heart to the other. Kircher, of Fulda, a Jesuit priest, scholar and microscopist, in the seventeenth century made the first contribution to the microscopic causes of diseases, but Frascatorius, in 1546, presupposed infection by a micro-organism which he called seminaria contagionum. Little importance was attached to such observations until Donne, in 1837, found vibrios in pus, and his observations led microscopists to take up such studies. In 1840 Jacob Henle concluded that the contagia

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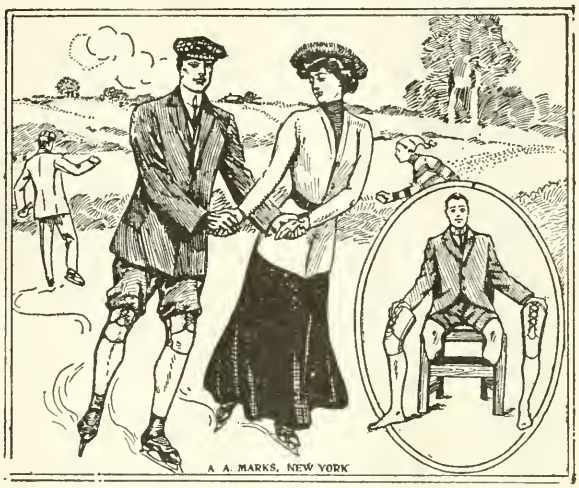

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of diseases carried by air currents as well as by direct contact must be living organisms.—Chemist and Druggist.

Retroversic Uteri.—After noticing the common lack of mention of the subject of posterior displacements of the uterus occurring without being caused by obstetric injuries, W. C. Gayler, of St. Louis, says that a very few gynecologists are now adding a fourth cause, namely, the "dorsal position during the puerperium." The uterus after delivery is more freely movable than at any other time and is large and heavy. It occurred to Gayler in delivering a woman who had previously had the round ligaments shortened for retroversion that it would be worth while not to put them under strain after delivery. He asks, "Are we ever justified in putting the recently delivered woman in the dorsal position? The uterus is then larger and heavier than at any time during the life of a woman, excepting before delivery, when a posterior position is impossible. The ligaments have not undergone involution, and cannot support the uterus. The normal bladder irritability is usually lacking for several days, often causing unsuspected bladder distention. An overdistended bladder, more than anything else, will tend to push a uterus out of position. In short, it would seem that the dorsal position during the puerperium is the ideal condition for the production of retroversic uteri. We have: 1. Temporary weakened ligaments. 2. Lack of any but ligamentary support. 3. Exceedingly heavy and freely movable uterus." Practically all the text-books on obstetrics, he says, ignore the position during the puerperium period, but some of the authors to whom he has mentioned the subject promised to include it in future editions. Gayler thinks that the dorsal position should be prohibited unless proper drainage of the lochial discharge should demand it.—Jour. A. M. A., Feb. 21, 1914.

Alcoholism at Conception.—The occurrence of conception at some festival season, when acute alcoholism is rife, has provided some investigators with data for consideration. The assertion that alcohol at festivals is the source of imbecility in offspring is as yet, however, unproven. Undoubtedly there may be an increase in the number of conceptions on such occasions, but I am not aware of any statistics which take into account the relationship of the alcohol to degeneracy in the parent, and the possibility of any ill results to the offspring being due to direct heredity has not, so far as I am aware, been adequately considered. In this connection it must be noted that we know but little of the influences, alcoholic or otherwise, which determine conception; and, moreover, the parents are apt to shelve their responsibilities in such matters, and attribute defects in their offspring to some accidental or even fanciful cause. Certain it is that many of the poorer classes attribute the largeness of their families to the abuse of alcohol and the consequent loss of control and other considerations.

The earlier researches of Laitinen have been very freely and exhaustively criticised by others. That he made no distinction between parents, one of whom drank, or both of whom drank, provides Professor Karl Pearson and Miss Elderton with matter for self-congratulation, in that they themselves distinguished between the father and mother, and arrived at the conclusion that the drinking of the mother had more influence

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than the drinking of the father, and that, slight as was the effect, since it influenced girls more than it influenced boys, it was unlikely to have been due to toxic action on the fetus. That the latter observers carried their observations a few steps farther than did Professor Laitinen cannot be denied, but, needless to say, this fact does not in itself render their conclusions any the more valid. Laitinen's previous researches on the effects of small quantities of alcohol on animals, and the degeneration which he claimed to have found in their offspring would, if correct, appear to have more direct bearing on the subject, inasmuch as it is not probable that the offspring inherited a parental neurosis of psychosis to which the effects of alcohol had been added and transmitted as such to the offspring. For our purposes we must merely take note of Laitenen's statement that the number of young of those animals that received alcohol was somewhat larger, but much weaker, than in the case of the young of animals not treated with alcohol. The truth of this statement will doubtless be fully investigated, and upon its verification much must necessarily depend.—British Med. Jour.

New York Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital, Second avenue, corner 19th street, announce a course of clinical lectures and demonstrations in the out-patient hall of the hospital on the following afternoons, at 4.15 o'clock, by Dr. Bulkley:

April 1—Primary lesions, genital and extra-genital. Innocent syphilis.
April 8—Early manifestations of syphilis.
April 15—Late manifestations of syphilis.
April 22—Marital and hereditary syphilis.
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On April 30 Dr. William Seaman Bainbridge will lecture on "Some Practical Phases of the Cancer Problem."

The lectures will be illustrated by cases, models, colored plates, photographs, etc. The course will be free to the medical profession on the presentation of their professional cards.

Dr. E. C. Register Honored.—At the recent meeting of the Tri-State Medical Society of the Carolinas and Virginia, Dr. E. C. Register, who for twenty-five years has been editor of our esteemed contemporary, the "Charlotte Medical Journal," was elected president. We congratulate Dr. Register upon the well earned honor and the Tri-State Medical Society upon its good fortune.

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Race Betterment Conference.—Four hundred men and women of prominence, comprising the first representative group of scientific experts ever gathered in America for that purpose, met in Battle Creek, January 8-12, to assemble evidence of race deterioration and to con-

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sider methods of checking the downward trend of mankind. The meeting was known as the First National Conference on Race Betterment. Through the co-operation of the press, the objects and aims of the Conference have been very widely disseminated, and a resultant influence for better race ideals is anticipated.

Already the effect of the Conference is apparent in Battle Creek, where popular interest in metal and physical efficiency was awakened by a series of public school tests which showed an alarming percentage of defective children in all grades.

The Conference had its inception in the efforts of four men, particularly interested in race betterment—Rev. Newell Dwight Hillis, pastor of Plymouth Church, Brooklyn, N. Y.; Dr. J. H. Kellogg, of the Battle Creek Sanitarium; Sir Horace Plunkett, former minister of agriculture for Ireland, and Prof. Irving Fisher, of Yale University. At the invitation of a central committee chosen largely by these men, fifty men and women of national prominence in the fields of science and education consented to share in the program. Their addresses, together with open discussion of many of the points considered, constituted a very widespread study of all phases of evident race degeneracy and the advocacy of many ideas of reform. Some of the suggested methods of improvement are frequent medical examination of the well, outdoor life, temperance in diet, biologic habits of living, open air schools and playgrounds, the encouragement of rural life, the segregation or sterilization of defectives, the encouragement of eugenic marriages by requiring medical certificates before granting license, and the establishing of a eugenics registry for the development of a race of human thoroughbreds.

Among those having a share in the program were Rev. Newell Dwight Hillis, Jacob Riis, Judge Ben B. Lindsey, Booker T. Washington, Dr. Victor C. Vaughan, Dr. S. Adolphus Knopf, Dr. C. B. Davenport, Dr. J. N. Hurty, the Very Reverend (Dean) Walter Taylor Sumner and many others of equal prominence.

RACE BETTERMENT MAXIMS.—"It will be no easy task to improve the race to the point where there will be no dependent children, but the elimination of the dependent child will be one of the best indices of the superiority of our national stock."—Dr. Gertrude E. Hall, New York State Board of Charities.

"I believe that a great deal can be done by publication of facts as to the physiological effects of alcohol, in the way of inducing educated and intelligent people to conserve their health by limiting the use of alcohol or giving it up altogether."—Henry Smith Williams, Author.

"Eugenics does not eliminate romance. We eugenists believe romance should be retained. Through the past it has proved a good thing."—Prof. Roswell H. Johnson, University of Pittsburgh.

"In order that the race may survive it will apparently be necessary to make a eugenic selection of healthy mothers and to provide that the cost of bearing and rearing children shall be equally shared by all."—Prof. J. McKeen Cattell, editor "Popular Science Monthly."

"The boys are learning that they have a calling just as sacred as the call to motherhood, and that is the call to fatherhood."—The Very Rev-

erend (Dean) Walter Taylor Sumner, of Chicago.

"The negro in the south, with all his weaknesses and handicaps, is not yet, in any large measure, in the ditch."—Booker T. Washington, principal of Tuskegee Institute.

"We must cultivate pure blood, instead of blue blood, if we would develop a race of human thoroughbreds."—Dr. J. H. Kellogg, superintendent Battle Creek Sanitarium.

PAPINE IN PAIN.—The wide popularity of Papine (Battle) has logically followed as a consequence of its value as a prompt anodyne, and one that is free from most of the evil features attaching to morphine. When opiates become clearly necessary for the relief of pain in nervous women or in children, physicians will find Papine to be as effective as opium, and with the distinct advantage of being free from most of opium's disagreeable effects. (Battle & Co., St. Louis, Mo.)

A WOMAN'S NUMBER.—The May issue of the Medical Review of Reviews is to be a woman's number. All the articles contributed will be from the pens of women physicians whose work has achieved national importance. With the growth of the feminist movement, the economic position of women has attracted universal attention. As medicine was practically the first profession open to women, it is only proper at this time to consider whether their entrance into the medical profession has been of benefit.

In order that women may present testimony by which they should be judged, it has been deemed advisable to give them an entire issue to present the evidence of the value of their accomplishments. In the laboratory, in the hospital, in institutions, at the bedside and in public service, women physicians have performed a valuable function. As a tribute to their earnestness, enthusiasm, modesty, energy, perseverance and scientific acumen, the May number of the Medical Review of Reviews will be dedicated to the women physicians of America.

INFECTIOUSNESS OF TUBERCULOSIS.—Replying to an attack on the movement for local tuberculosis hospitals made by the Christian Science Church, Dr. Hermann M. Biggs, State Commissioner of Health of New York, says in a statement published through the "Journal of the Outdoor Life," the official organ of The National Association for the Study and Prevention of Tuberculosis, that tuberculosis is an infectious disease and that every precaution known should be taken, especially for the protection of young children. He particularly urges local hospitals.

The occasion for Dr. Biggs's statement is the recent wide dissemination of an article purporting to show that tuberculosis is not infectious. By quoting only a part of a medical paper written by Dr. E. R. Baldwin, of Saranac Lake, the Christian Scientists have given the impression that tuberculosis is not infectious, when, as a matter of fact, Dr. Baldwin laid stress on the extreme danger of the disease to children.

"Tuberculosis is an infectious and communicable disease," says Dr. Biggs. "No age is exempt, and no one is immune against tuberculosis infection, but differences in susceptibility exist at different ages. The frequency of infection increases rapidly from the first year until at the age of fifteen perhaps 75 per cent. of the population show a positive reaction to tuberculin, although only a small proportion have signs of the disease which can be detected by other means.

"The conviction has been gradually strengthened that the first infections from tuberculosis often occur during infancy and childhood. It seems probable that many of those who develop the disease in adult life have carried the latent infection since childhood, and have no recent or new infection when the symptoms of the disease appear.

"It has also been found by experiment that it is difficult to re-infect an animal that has already been previously inoculated with tuberculosis. Hence, it is inferred that some degree of immunity may be thus produced that may serve to ward off bacilli which might find lodgment in an individual not previously infected. Therefore, it will be understood how the mild infections, which are healed and present in most persons who have reached adult age may, and presumably do, offer some protection against further limited invasions of the tubercle bacilli. While persons are in good health the protection thus offered is an advantage having some resemblance to vaccination, but only very limited in nature and not complete. Prolonged or intimate exposure, however, or exposure to a virulent type of tuberculosis may result in a new infection, even of those who have overcome a previous mild infection. It is, moreover, by no means certain that indebilitated conditions due to other diseases, to dissipation or to bad environment, new infections may not occur. We know positively that the first childhood infection may under such circumstances break out anew and thus become a doubtful advantage, a real sword with two edges.

"Considering the natural and acquired resistance to infection by adults, much unreasonable fear or "phthisiophobia" has prevailed in late years. Because there is no precaution too great for the protection of the young and delicate, this does not justify healthy adults in exaggerated fears for their own safety. In view of the present wide distribution of the disease, and lack of adequate means for segregation, some exposure to infection is practically unavoidable. Efforts should be redoubled instead of relaxed for the better isolation, humane care and intelligent treatment of consumptives."

"JUST PLAIN NERVOUSNESS."—Toward the relief of that condition which may be aptly characterized as "just plain nervousness," Pasadyne (Daniel) will be found of distinct value. Pasadyne, of course, is merely a high grade concentrated tincture of passiflora incarnata, and possesses a definite calming influence. It is in nervous states marked by sleeplessness that Pasadyne in moderate dosage shows its marked usefulness. A sample bottle (without cost) may be had by addressing the laboratory of John B. Daniel, Atlanta, Georgia.

DISCRIMINATION IN CHOOSING AN ANODYNE.—The exercising of more than ordinary care in choosing an anodyne, particularly in the case of women and children, is quite essential. This is all the more so when it is remembered what distressing after-effects follow the use of some anodynes. The fact that careful practitioners are partial to Papine (Battle) and continue to use it year after year indicates its superior features. Papine affords a maximum of anodyne properties with a minimum of evil effects. (Battle & Co., St. Louis, Mo.)

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HYPODERMIC INJECTIONS OF SODIUM CACODYLATE IN THE TREATMENT OF ULCERS OF DOUBTFUL ORIGIN

By S. H. Ackerman, M.D., of Brooklyn, N. Y.

The following case I report chiefly as an example of the very great value of hypodermic injection of sodium cacodylate in the treatment of ulcerous conditions, especially those of doubtful origin. Not only has sodium cacodylate an undoubted value as an anti-syphilitic but its general tonic effect, due to its arsenic content, is an advantage not to be gained by any of the usual methods of treatment. If the ordinary precautions of technique are observed the method is without danger and does not even temporarily incapacitate the patient. Its rapidity of action is also to be noted. I have also found it very efficient in other obstinate and chronic skin lesions. The following is a brief history of an interesting case.

Mrs. E., aged 45, washerwoman by occupation, showed no evidence of syphilitic or tuberculous infection in her personal or family history. On Dec. 25, 1911, she was seen by me at the dispensary of the Methodist Episcopal Hospital and gave the following history. For five months she had had sores on her right hand. These lesions started as subcutaneous nodules, deep, dull red in color and about the size of a pea. They increased in size slowly and later became tender and painful. The apex softened and the overlying skin sloughed off leaving large round ulcers with irregular undermined edges, and yellow granular base with gray slough and a thin watery exudate. There were four of these ulcers on the dorsum and three on the palmar aspect. There were also four of the nodules in different stages of development, and several irregular, circular scars, the remains of previous ulcers. After several weeks of persistent treatment some of the lesions would heal, gradually becoming clean and closing over with a rather pale granulation tissue and epithelium. In the meantime another new one would break out. For a period of several months she had been incapacitated and at times the hand had been swollen and painful; even to the extent of preventing natural sleep. She had been treated at several institutions by mercurial and zinc ointments and wet dressings without any permanent relief.

The Von Pirquet test was positive and the Wassermann reaction slightly positive. Curettings from the ulcer base showed a chronic inflammatory process. Cultures proved negative. The lesions were diagnosed as probably syphilitic in origin, and an injection of salvarsan advised. The patient was unwilling to be subjected to this procedure. I then used a solution of sodium cacodylate, ten minims containing one grain. This I injected intramuscularly starting with one-half a grain and increasing to two grains. The injections were given three times a week, and caused no local or general reaction. The lesions were dressed with mercurial ointment.

In one week the pain and inflammatory reaction had disappeared and the lesions showed marked improvement in appearance. In two weeks they were entirely healed although those nodules that were

beginning to break down did not cease their activity. The patient then neglected treatment for several days and the nodules rapidly broke down and ulcerated. She then resumed treatment for two weeks more and the new ulcers healed, and after a third two weeks of treatment all the ulcers have remained healed and no new ones have developed. She has not had any similar trouble since then and shows no other evidences of syphilitic infection.

This case demonstrates the efficiency of sodium cacodylate in the treatment of chronic skin lesions, especially those of syphilitic origin. Sodium cacodylate is the dimethylarsenate of sodium, and is a white amorphous powder freely soluble in water. It is said to be much less toxic than other forms of arsenic usually administered, and its therapeutic action due to the slow liberation of arsenous acid in the tissues, from which it is absorbed into the blood stream. This salt is extensively used in anemias of whatever origin, and is of great value as a nerve tonic in various diseases of the nervous system, as multiple sclerosis, syringomyelia, and chronic neuralgias. Sodium cacodylate has been highly recommended also in tuberculous and syphilitic affections and in cases where salvarsan is desirable but impracticable. Indeed its therapeutic action is remarkably similar to that of salvarsan.

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TREATMENT OF BRONCHIAL ASTHMA

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BRONCHIAL asthma may be defined as a chronic condition characterized by a recurrent hyperemia of the mucosa of the finer bronchial tubes, with the occurrence of a mucus exudate. Most authorities claim that it is a neurosis of reflex origin with the changes characterizing chronic bronchitis. In confirmed asthmatic cases, pulmonary emphysema, bronchiectasis, and dilatation and hypertrophy of the right side of the heart co-exist.

ETIOLOGY.

(a) *Acute bronchitis*, if frequently repeated, may lead to asthmatic attacks. On the other hand, a subacute or chronic bronchitis is often set up by asthma.

(b) *Nervous asthma.* Often an asthmatic attack will imply an unstable condition of the nervous system, and appears to belong to the same category with hysteria, epilepsy and migraine, with which it occasionally alternates and seems to possess similar hereditary tendencies. That asthmatic attacks have a neurotic element as the causal factor cannot be doubted. Severe attacks frequently following emotional excitement, grief, disappointment, sudden joy, fright, etc.

(c) *Secondary asthma.* Attacks of asthma are often experienced during the course of chronic nephritis, gout, rheumatism, malaria, syphilis, emphysema, and chronic heart disease.

(d) *Reflex asthma.* Attacks may be of reflex origin as is seen in those suffering from nasal polypi, spurs, decayed teeth, adenoids, intestinal worms, adherent prepuce, gastritis, etc. It has been repeatedly demonstrated that asthma may be caused by a nasal polyp, the removal of which will cure the asthma, which will return with the recurrence of the growth, disappearing again with its extirpation. One authority states that asthma has a nasal origin in 30 per cent. of cases, *i.e.*, polypus 22 per cent., rhinitis 8 per cent. Errors consisting chiefly in excesses in diet frequently excite an attack of asthma; the "peptic" asthma of the old writers were really due to attacks of indigestion in which the gastric distention interfered with the circulation.

(e) *The inhalation of certain irritants* as chemical vapors, dust, fogs, emanations from plants or certain animals, etc. Cullen observed the development of asthma in a druggists' wife whenever ipecac was powdered in the laboratory. The smell of a sulphur match, smoke, pitch, hay, coffee, the odors of the kitchen, and the odors of flowers (rose, lily, etc.), precipitate attacks in some persons. Fagge speaks of the case of a lady who was affected whenever she came in the presence of the cat, no matter where the animal was hidden. It is said that Austin Flint, the great clinician, was unable to sleep on a feather pillow, as this would bring on an attack of asthma.

(f) *Predisposing factors.* Statistics seem to prove the presence of a strong hereditary influence in asthma, this being true in approximately 50 per cent. of cases. At least two-thirds of all cases are seen in males, proving that sex exercises great influence. Season is of importance in cases in which the inhalation of pollen of certain plants precipitate a paroxysm; consequently a large number of these cases occur during late summer and autumn months. Most cases, however, develop during the winter and spring, often following an attack of hay fever.

Whittaker very aptly summarizes the etiology of asthma: "The disease requires three factors: (1) bronchial spasm; (2) bronchial catarrh, which, however, may be entirely absent in an individual case; (3) hyperesthesia of the vagus nerve, which must always be present, and which constitutes the asthmatic tendency. In such a case an irritation anywhere at the periphery of a sensitive nerve may be reflected to the vagus to produce bronchial spasm. A not infrequent source of irritation is the uppermost portion of the respiratory tract, *i.e.*, the nasal mucous membrane, and it is in the uppermost portion of the nasal fossa, that about the middle turbinate bones, that the relation of this irritation is most frequently observed. Thus, the removal of a polyp from the inferior meatus has cured a case of asthma, while other and even numerous polypi still remained in the upper nasal passages. Hyperplastic mucous tissue, adenoid tissue, hyperesthetic areas, bony occlusions, irritations, or stenosis of any kind or cause in this portion of the respiratory tract are the most prone to produce asthma. It is undeniably true that these conditions may exist without causing asthma. It is equally true that some one of these conditions may be found in a large number of cases. Irritations about the larynx, especially of the interarytenoid folds, are much less frequent causes. Glasgow made an interesting confirmatory observation of such causes by the accidental application of a concentrated solution of carbolic acid to the larynx for some local affection, when the asthma from which the individual had suffered for years disappeared, never to return.

"True asthma, that is, the pure nervous asthma, by which is meant asthma without discoverable cause, is, as a rule, easily recognized. The age of the individual, the time of its occurrence, *i.e.*, during the night, the suddenness of its onset, the intensity of the dyspnea, above all things the difficult expiration, the sibilant and sonorous ronchi, the great anxiety, the struggle, the "Luft-hunger" with the gradual cessation to complete relief and the free interval, unmistakably stamp the disease."

TREATMENT.

With the exception of malignant disease and tuberculosis, there is no morbid condition more discouraging to both physician and patient and less responsive to treatment than some forms of asthma.

Occasionally a patient will be completely cured of this troublesome respiratory condition by the removal of a nasal obstruction, or the correction of some other discoverable cause, but now many cases of the so-called "idiopathic" variety respond so readily? It is with this form that we are chiefly concerned, and the physician who cures this patient has truly helped suffering humanity. To relieve an asthmatic *attack* is usually an easy matter; to *cure* the patient is only too often an apparently impossible feat. And yet on second thought we must not assume too pessimistic an attitude, for occasionally a patient who has "gone the rounds" without obtaining relief will at last be cured, the happy occasion resulting from the final selection of remedial measures which seem to "touch the spot," acting as specifics in the case under consideration.

Presented with a patient suffering with asthmatic seizures, what should be the mode of procedure in order to obtain the greatest degree of relief, or if possible, to affect a cure? Here another question arises—is this a case of primary or secondary asthma? This question is often answered with great difficulty, entailing a comprehensive study of every detail. Broadly speaking, every year narrows slowly but surely the number of primary or idiopathic cases, because of the ultimate discovery of immediate or remote etiologic factors.

After eliminating the exciting causes, treatment must be directed towards overcoming the attack and either to prolong the intervals between attacks or prevent their occurrence. To insure the probability of success, treatment must be not only medicinal, but dietetic and hygienic as well.

If the patient is a child, its daily life, *i.e.*, the sleep, diet, clothing, bathing and education must be so regulated as to overcome the neuropathic tendency in order to attain stability of the nervous system. A thorough search must be made for the underlying cause of the disease. If rickets, eye strain, carious teeth, nasal obstruction, or an adherent prepuce be present, these must be corrected. A special study of the nervous, circulatory, respiratory, gastro-intestinal and genito-urinary systems must be made, including a study of the internal secretions and an examination of the blood, urine, sputum and feces. In this manner abnormalities may be detected which were never before suspected, the correction of which may mean the cure of the patient. If the discovered abnormalities are merely co-existing conditions without acting as causative factors, their correction will improve the patient's health and will serve to lessen the

frequency and mitigate the severity of the attacks.

Cold bathing or sponging at least every morning, followed by a thorough friction of the skin with a coarse towel to enhance the circulation, must be insisted upon for its tonic effect. A weekly cabinet bath or Turkish bath may markedly improve some patients. The patient should be instructed to practice pulmonary gymnastics before an open window night and morning; these must consist of slow, rhythmical deep inhalations followed by exhalations, beginning with ten or fifteen excursions each period for the first few days, later gradually increasing the number until this duty occupies fifteen or twenty minutes each time, or short of fatigue. A careful study of the diet should be made, and such substances as tea, coffee, alcoholic beverages, pastries, fried meats, pork, sweets and other articles objectionable to the stomach should be interdicted. At times a gastric analysis may be necessary in order to arrive at a suitable dietary. The bowels must be kept regular.

The question of sleep is an important one, as the proper balance between the amount of work and rest suitable for the economy varies widely in different individuals. However, these patients should as a rule be permitted more sleep than under normal conditions. An abundance of fresh air is highly important at all times, and if the patient does not sleep out of doors, the room should thoroughly ventilated.

If the patient is in comfortable financial circumstances, a change of climate may be of service. With regard to location, every patient is a law unto himself. Personal idiosyncrasy is a strong factor in this connection; some improve in a warm, equable climate, others do better in a cooler atmosphere; some improve in low land, others in high land. At times a patient will prefer the heavy impure air of the city to the pure air of the country. The personal experiences of the patient and the condition of the heart, bronchial tubes and nervous system must be taken into account. California, Nova Scotia, Maine, Canada, the Great Lakes, Florida and the Rocky Mountains are each favored by certain groups of asthmatics. The sulphur or mineral water springs here and abroad are advocated for the therapeutic value of the contained natural elements. My experience, however, proves that the average intelligent patient can be treated at home quite successfully if the proper attention to detail is given.

The medicinal treatment resolves itself into the treatment of (a) the attack, (b) the interval between attacks.

(a) The treatment of the *attack* consists in the removal of all impediments to free respiration, *i.e.*, removal of constricting clothing about the neck and chest, and placing the patient near an open window in as comfortable a position as he can assume. Wherever possible, the cause or causes of the attack must be removed. Often a calomel purge, a high enema, an emetic, and occasionally a hot bath will serve to relieve a paroxysm.

A hypodermic injection of morphine and atropin usually gives prompt relief. An attack may often be avoided by the inhalation of a gtt. iii pearl of amyl nitrite crushed in a handkerchief, or similarly, a few whiffs of chloroform or ethyl chloride.

In the absence of cardiac lesions the administration of chloral hydrate grn. xx to xxx often act like a charm.

A pint of hot, strong coffee without cream or sugar, taken upon the appearance of the seizure may arrest the paroxysm.

In persons unaccustomed to its use a fair size dose of hot whiskey to the point of intoxication will occasionally be found very useful.

The inhalation of fumes of niter-paper, a very popular remedy, often gives prompt temporary relief. The atmosphere of the room must be filled with the vapor in order to obtain the maximum effect.

Cigarettes consisting of belladonna, hyoscyamus, stramonium, or lobelia are very useful when the smoke is inhaled by the patient. Similarly, persons not addicted to its use may find tobacco smoking equally efficacious.

Anders has found the following formula very useful:

Tr. Lobeliæ	f. 3j
Tr. Nitroglycerin (1%)	♏xvj
Sodii Bromidi	3v
Vini Ipecac	f. 3v
Ext. Hyoscyami	grn. vij
Elix. Simplicis	ad f. ℥iv

Sig.: Teaspoonful in water every hour or two.

Among the popular group of remedies consisting of belladonna, hyoscyamus, stramonium and lobelia, the first-named is the most serviceable. It should be given in the tincture, beginning with five drops and pushed gradually to the point of tolerance. It seems to act favorably in this disease by its anti-spasmodic effect. It also reduces the congestion of the bronchial tubes and dries up their secretion.

Adrenalin chloride has been found of great use in promptly checking an asthmatic attack. I have obtained excellent results from the intramuscular injection of a 1 to 1000 solution in doses of ♏x. The patient

is almost invariably relieved within a few minutes. I have seen the administration of adrenalin followed in rare instances by such untoward symptoms as sudden restlessness, anxiety, and pallor, which may be due to the temporary constriction of the vessels of the brain. On the whole, however, adrenalin is one of the best agents we have in the treatment of asthmatic seizures. It acts as a broncho-dilator, relieving the spasm of the unstriped muscular fibres of the bronchial tubes and at the same time overcoming the congestion of the mucous membrane by a constriction of the finer arterioles. It also assists in the expulsion of the mucous exudate so that the patient breathes more freely and relief is felt at once, often followed by a refreshing sleep. Its action, however, is only temporary, having no influence on subsequent attacks. Adrenalin may also be administered by means of an endobronchial spray, bringing the drug in direct contact with the affected mucous membrane. Even an ordinary spray of adrenalin chloride solution acts favorably in some cases.

The following solution has been used with success:

Adrenalin (1:1000) ..... ℥cxxxv
Atropin Sulphatis ..... grn. 1/5
Cocaine Hydrochloridi ..... grn. ¼
Aquæ Dest. ..... ℥xv
Sig.: Place in spraying apparatus and use when necessary.

As this formula contains a habit-forming drug it must be prescribed with great care.

Cocaine sprayed into the nose, throat, or trachea in a 2 per cent. solution may relieve an attack depending upon a hyperesthetic area of mucous membrane.

Apomorphine hypodermically in doses of grn. 1/10 is a very useful remedy, because it produces nausea and a thorough relaxation of the constricted bronchials, assisting also in the expulsion of the mucous exudate.

Hyoscine hydrobromide in doses of grn. 1/200 to 1/100, preferably combined with strychnine sulphate grn. 1/40 has its field of usefulness, acting as a strong hypnotic and causing the patient to fall off in a deep refreshing slumber to awaken completely relieved. It must be remembered that this is a dangerous drug for routine administration.

Nitroglycerin alone or combined with morphine or atropine is very useful in this disease for its vasodilator effect, but its influence given alone is fugacious and not always to be relied upon.

Bromides are useful as anti-spasmodics, but inferior to other remedies, as the patient soon gains a tolerance to it and if pushed it may result in bromism.

Dionin grn. ½ to 1 administered per gram followed by a tumblerful of hot water has proven very efficient in my hands in a number of cases, relief from the paroxysm being obtained within from twenty to forty minutes. The action of dionin in asthma is that of an anti-spasmodic, relaxing the contracted bronchioles so that expiration becomes enhanced and relief from the paroxysm is experienced. It also assists in quieting the anxiety of the patient, so that he becomes calm and able to resume his duties or his sleep, as the case may be. This remedy should be substituted for morphine, cocaine, or heroin, because of the many well-known disadvantages attending the use of the latter drugs. Dionin is not only just as efficacious in the treatment of asthma and other respiratory affections as morphine, cocaine or heroin, but is devoid of the objectionable after-effects. There is no secondary constipation, no undue lassitude or drowsiness characteristic of morphine, to impress the patient that he has been taking "dope." Moreover, patients do not gain a tolerance to dionin, so that it is unnecessary to increase the dose. Although I have been prescribing dionin quite freely for some years, I have never seen a "dionin fiend." Children possess a natural idiosyncrasy to the action of morphine, but dionin in doses corresponding to the age or weight of the child is taken with impunity.

(b) Treatment of the *interval between attacks*. As has already been implied, the success of the treatment of the interval or the prevention of the recurrence of attacks depends upon the ability to discover and remove the cause. The scientific treatment of discoverable abnormalities of the upper respiratory tract cannot be too strongly emphasized as being of utmost importance. If the case is one of the primary or so-called "idiopathic" variety, the probability of cure is lessened. It is chiefly with this form of the disease that we are concerned. Though there are no specifics in the medicinal treatment of bronchial asthma, a few selective drugs seem to behave as such in some cases; while other cases will be very favorably influenced by drugs of an entirely different class. For example: Mr. A. will be greatly benefitted by aspidospermine; while Mr. B. and Mrs. C. will obtain little if any benefit from this drug, but will respond well to the belladonna group. Mr. X. is on the road to complete cure through the influence of the iodides of potassium or sodium taken in doses to the point of tolerance for a period of six or seven months, but Mr. J. must be given an occasional dose of chloral hydrate or morphine to be made comfortable. Mrs.

M. is a miserable soul, for she has been given almost everything known to medicine to prevent the paroxysms, but without appreciable results, the spells themselves being promptly controlled by the intra-muscular injection of a few drops of 1:1000 adrenalin chloride solution. On the other hand, Master G., an anemic schoolboy of thirteen, is completely cured within a few months by the thorough correction of the diet with the withdrawal of tea and coffee, and the administration of syrup of the iodide of iron. Every case, therefore, is a study in itself. In further illustration of these remarks let us examine the following case records:

CASE I.—E. W., age 45, height 5 ft. 6 in., weight 137 lbs., occupation machinist, appeared in my office August 27, 1911, suffering with typical bronchial asthma.

Family History: Father died at sixty of heart disease complicating asthma. Remainder of family history unimportant.

Previous Medical History: Patient had usual diseases of childhood. Had been subjected to frequent attacks of "cold in the head." Denies ever having had venereal disease. Had been suffering with asthmatic attacks since the age of ten often combined with hay fever.

Social History: As an expert machinist in a large shop he is employed from eight to ten hours daily in an atmosphere which is heavy and impure. Married at twenty-eight, has one son and two daughters, who are in good health. Uses tea, coffee, tobacco and alcoholic beverages moderately.

Present illness: This is a continuation of the asthmatic attacks which began at the age of ten. As he grew older the seizures became worse and the intervals between attacks shorter, until during the past two years he has hardly been free from some degree of dyspnea. He had been treated from time to time with varying degrees of failure. During the past several weeks paroxysms were so continuous that he has not enjoyed one night's rest, but was compelled to sit in an arm-chair, snatching an occasional dose between recurrent dyspneic seizures. Several days ago he was informed by a doctor (very unwisely) that he had but two weeks to live. Patient coughed almost incessantly, with the expectoration of large quantities of fetid mucopurulent material. Pulse 80, temperature 100° F., respirations 12 per minute.

Physical Examination: The expression was anxious, with moderate cyanosis; bodily nutrition below normal; posture stooped, with rounded shoulders. Examination of the upper respiratory tract was negative from a practical standpoint. *Inspection* of chest proved it to be typically barrel-shaped, with poor expansion. *Palpation* presented diminished tactile and vocal fremitus. Apex beat cannot be seen or felt. Pulse of fair volume and tension; arteries sclerotic. *Percussion* presented universal hyperresonance, excepting an occasional spot over which there was an impaired note or dullness signifying a bronchiectatic dilatation. On deep percussion the right ventricles proved to be enlarged. *Auscultation* presented wheezing breath sounds which could be heard some distance from the patient. Rales of all kinds—large and small, sibilant and sonorous—were present all over the chest. An occasional gurgling sound was heard over a bronchiectatic cavity.

Examination of sputum proved the presence of numerous pyogenic organisms, eosinophilic cells, no tubercular bacilli. Urinary examination was negative.

Treatment.—Patient was ordered to stop work for several weeks so that all possible rest and fresh air could be obtained. The diet was regulated, and tea, coffee and alcoholic substances prohibited. A preliminary course of calomel was given and the following prescription was ordered:

> Aspidospermini .....
> Dionini .....āā grn. ¼
> Sodii Nitritis .....grn. j
> M. et fiat caps. No. I.
> Mitte tales doses No. XX.
> Sig.: One every three hours, followed by a glass of hot water.

The patient began to improve on the second day, and on the fourth day of this treatment he was able to secure a night's sleep. At this time the following prescription was given:

> Aspidospermini .....
> Dionini .....āā grn. ¼
> Sodii Nitritis .....grn. j
> Ext. Belladonnæ .....grn. 1/6
> Sig.: To be given in capsule every four hours.

At the end of two weeks the patient said that he was feeling "a thousand times better." During that time the expectoration was exceedingly profuse, the material expelled from the bronchi and bronchiectatic cavities amounting to nearly two pints in twenty-four hours for a few days. But at the present instant expectoration was very scanty, breathing without difficulty, and looking bright and cheerful. The asthmatic attacks had almost gone, amounting to an occasional slight dyspnea, appetite improved, and an appreciable gain in weight. The last prescription was continued for two weeks longer and the following was ordered in addition:

> Sodii Iodidi (aqueous sol. gtt. I equals grn. I).....ʒiii
> Sig.: Five drops in milk t. i. d., increasing the dosage by one drop every second day until the point of tolerance is reached.

About one month from the beginning of treatment all asthmatic symptoms had disappeared: he was taking only the above iodide solution and feeling strong and happy, having gained fifteen pounds in weight. When thirty drops t. i. d. was reached an acneoform eruption appeared on the patient's skin so that he was ordered to reduce the dosage of the iodide to gtt. v, then gradually ascend as before to xx, which dosage proved quite sufficient for him. After another two weeks' rest from work he was permitted to return to his shop "feeling fine." He is still taking twenty drops of the iodide solution t. i. d. and has since had no asthmatic seizures. This patient can be considered *cured*.

CASE II.—F. S., jeweler, age 50, a tall, well-nourished German, applied for treatment February 18, 1912, for recurrent asthmatic seizures.

Family History: Father died aged 54; had been a chronic asthmatic. Otherwise negative.

Previous Medical History: Operated on for fistula-in-ano ten years ago. Had no diseases of childhood. Acute bronchitis one year ago of two months' duration. Denies venereal disease.

Social History: Takes tea and coffee moderately; no tobacco; alcoholic beverages regularly, at times to excess. Married at thirty-two; wife, one daughter and one son in good health.

Present Illness: For the past nine years has been suffering with periodic attacks of "tightness in the chest," with difficult breathing. These seizures would occur once every twenty-four or forty-eight hours, each lasting an hour or two. There is moderate cough with some muco-purulent expectoration. Sleeps fairly well, the attacks occurring usually before noon. Temperature, pulse and respiration normal.

Physical signs: Patient is muscular, well developed and assumes a slightly stooped posture. Examination of the upper respiratory tract reveal a perforated nasal septum with chronic atrophic rhinitis and ozena. Inspection of chest presented moderate emphysema with respiratory expansion reduced to 1½ inches. *Palpation:* diminished resonance; apex beat, though not seen, could be felt; pulse of good volume and ryhthm. *Percussion* presented universal hyperresonance; right side of heart slightly enlarged. *Auscultation:* Small, wheezing rales all over the chest, an occasional larger rale of chronic bronchitis present at the bases. Heart sounds practically normal. Nothing important discovered in the sputum and urine.

Treatment: Proper dietetic and hygienic measures were outlined and the treatment of the nasal perforation and ozena instituted. For the chronic bronchitis the following was given:

Dionini .....grn. ¼
Ammonii Chloridi.....grn. v
Terpini Hydratis .....grn. iij
Sig.: In capsule every three or four hours.

This treatment, after two weeks, resulted in an improved condition of the nose and a diminution of cough and expectoration, but no improvement in the asthmatic attacks. The treatment was continued unaltered for another two weeks, excepting that nitroglycerin grn. 1/100 was added to the above formula. There was no improvement in the asthma, though the cough and expectoration had entirely disappeared and the nasal condition still further improved. At this time medicinal treatment as outlined in Case I (*vide supra*) was instituted, but with no improvement in the asthmatic attacks. After six months' treatment, during which time almost every drug used in the treatment of asthma was tried, there was still no improvement. A nasal spray consisting of cocaine grn. ii, atropine grn. i, adrenalin chloride (1:1000) drm. i and aquæ q. s. ad oz. i was now given. This seemed to relieve his attacks of asthma at once whenever he used it; but, not wishing to create a cocaine fiend, I discontinued the spray and resorted once more to internal medication. But as before I totally failed in efforts to prevent attacks. As a last resort I suggested to him the injection of antidiphtheritic serum. Having refused to submit to these injections I discharged him—cured of his bronchitis, improved in his nasal condition, but totally unimproved as regards his asthma.

CASE III.—J. R., age 51, diamond setter, appeared in my office June 23, 1912, with a history of asthma of fourteen years' duration. *Family History:* Negative. *Previous Medical History:* Pneumonia at thirty-two, typhoid at thirty-five, frequent attacks of hay fever since the age of twenty. *Social History:* Habits good. Married at twenty-two; wife, one son and two daughters in good health.

Present Illness: Has had asthma for the past fourteen years, often combined with hay fever, especially during spring and fall. The attacks occur at irregular hours, but usually at night, once every few days, but in the event of mental excitement or worry would occur once or twice daily, each attack lasting from one to four hours. Moderate cough and expectoration.

Physical Examination: Patient is well nourished, medium height, with good color. Examination of the chest presented moderate emphysema and the presence of a few wheezing rales, otherwise negative. Sputum and urine practically negative. Upper respiratory tract was normal.

Treatment: Dietetic and hygienic advice was given. The prescription of dionin, aspidospermine, ext. belladonna and sodium nitrite (see Case I) was given for one week, at the end of which time he was but slightly improved. The formula was continued, and the following given in addition:

Sodii Iodidi drms. iii.....3iij
Fl. Ext. Euphorbiæ Pilluliferæ....f. ℥jss
Elixir Simplicis .....ad f. 3iij
Sig.: Teaspoonful three or four times a day.

The following week he reported feeling well, having had no more asthmatic seizures. The treatment was continued for two weeks longer and then sodium iodide was substituted in gradually ascending doses. It was found that 20 grn. t. i. d. was his point of tolerance, which dosage was taken for three months, and then reduced to grn. x. He is still taking sodium iodide grn. x t. i. d. in aqueous solution and has had no asthmatic attacks since. This patient was discharged cured.

CASE IV.—G. G., male, thirteen, was brought to me by his parents October 16, 1912. *Family History:* Mother had occasional asthmatic attacks during childhood. Father well. Is the only child. *Previous Medical History:* Had measles, whooping cough and two attacks of pneumonia before the age of ten. *Social history:* Is a schoolboy. Indulges in sweets, pastries, bananas, greasy foods, and *three cups of coffee* daily. not very bright in the classroom.

Present Illness: Has had occasional attacks of asthma since the age of seven, which lately have become aggravated, occurring every night and preventing sleep. Little cough and expectoration.

Physical Examination: Frail undersized boy, anemic, presenting a somewhat pigeon-breasted chest. An occasional wheezing rale is heard over the bases of the lungs, otherwise negative. Vision normal; no adherent prepuce. A marked hypertrophic rhinitis is present. Examination of feces sputum and urine negative. The blood showed fifty-five per cent. hemoglobin and 3,800,000 red blood corpuscles.

Treatment: Dietetic and hygienic measures outlined especially forbidding the use of coffee and other articles deleterious to the child, and he was ordered to take a pint of cream in twenty-four hours. The proper treatment of the nose was instituted, and the following prescription was ordered:

Dionini .....grn. 1/10
Ext. Belladonna .....grn. ⅛
Icthyolis .....grn. ij
Arseni Trioxidi .....grn. 1/60
Sig.: To be taken in capsule t. i. d. after meals.

At the same time the syrup of the iodide of iron dram j in milk was given before each meal. With occasional slight variation, the above treatment was continued for two months, at the end of which time all asthmatic symptoms had disappeared, the blood picture had improved to almost normal, and there was an increase of five pounds in weight. The above medication was discontinued and arsenoferratose administered for eight weeks longer, when the patient was discharged cured.

In the discussion of the above cases, we have already considered some of the important drugs to be used in the avoidance of asthmatic attacks. The most important of them are the iodides, aspidospermine, dionin, the nitrites, the belladonna group, and arsenic.

Of the iodides, the sodium and potassium salts are the most commonly used, though during the past year or two the preparations known as iodipin and iodival have been found to be more satisfactory in the introduction of iodine into the system. The syrup of the iodide of iron and the syrup of hydriodic acid have also their field of usefulness.

The nitrites, are very useful in asthmatic conditions for their influence on the contracted arterioles and reduction of blood pressure. The most important are nitroglycerin, sodium nitrite, and erythrol tetranitrate. The first two are the most commonly used, particularly the latter during the interval between attacks because nitroglycerin is very fugacious in its action. Erythrol tetranitrate, a valuable drug from a therapeutic standpoint, is rather expensive for the average patient.

The virtues of dionin have already been discussed.

Aspidospermine is one of the most valuable remedies at our disposal for the treatment of the idiopathic form of asthma, particularly when copious expectoration is a marked symptom. It is truly the "digitalis of the lungs," not only strengthening and regulating the respiratory cycles, but also acting as a valuable pulmonary evacuant ridding the bronchial tubes of large quantities of sputum, thus overcoming respiratory embarrassment. This substance combined with dionin, ext. of belladonna and sodium nitrite or nitroglycerin will act as a specific in certain cases.

Arsenic, particularly in the form of arsenoferratose or sodium cacodylate, is highly advocated in cases where anemia is present and an alternative is indicated.

Eriodictyon (yerba santa), grindelia robusta and euphorbia pillulifera are highly valuable drugs and are to be tried in cases where the above mentioned measures have failed.

Quinine and especially the tasteless euquinine is advocated where the asthmatic attacks are characterized by periodicity.

Thyroidin and the suprarenal gland have yielded good results in the hands of some clinicians.

The coal tar products (acetanilide, antipyrin, etc.), seem to act favorably in asthma, but are dangerous because of the resulting depression of the circulation.

Aconite has been found useful in asthma preceded by coryza.

Physostigma aids in the expulsion of mucus by an influence on the muscular fibres of the bronchioles.

Strychnine, especially tr. nux vomica, given to the point of tolerance, has succeeded in prolonging the intervals between attacks and occasionally in curing a case.

Ichthyol has proven very valuable in some of my asthmatic cases. It seems to act as an alterative to the pulmonary tree and to improve appetite and nutrition. A rapid gain in weight is often seen following its use.

The calcium salts have been used with asserted success by some observers, but their real virtues in asthma are questionable.

Anti-diphtheritic serum, injected at intervals, has cured a few scattered cases. The use of this substance in essential asthma is still in its experimental stage, but judging from reports and a few observations of my own it seems that it will soon supplant some of the other drugs now in use in the treatment of this disease.

In conclusion, it will be well to say that asthma, being a most difficult and often tedious condition to treat, is at the same time an interesting study. It is not only necessary to thoroughly understand and work out each case, but also to be thoroughly conversant with the physiologic action of every drug given the patient.

1714 N. 7th St.

ATROPINE IN STOMACH DISEASES

Atropine will diminish the acidity of the stomach contents and will show a pronounced antiperistaltic effect. As a result hyperacidity and pylorospasm will be corrected and the functional hour-glass stomach will be relieved. The influence of the drug upon pain is not to be compared to the effect of morphine, for with the latter drug the hyposecretion of gastric juice is usually followed by a hypersecretion. In severe pains, it is therefore advisable to combine the morphine with atropine. The dose employed by D. Pletnew was ¾ to 1 milligram daily subcutaneously.—Therap. Monatshft., Jan., 1914.

[Contributed to Merck's Archives]

TREATMENT OF PNEUMONIA

By George L. Servoss, M.D., of Gardnerville, Nevada

A great many follow a set line of treatment in pneumonia, regardless of the patient or his peculiarities. A vast majority of such men contend that this disease is self-limited, and no matter what may be done, it will go on to termination, either recovery or the reverse. But few, if any, of this class will admit that the disease is subject to abortion, or that its severity may be abated. The idea of self limit clings to them as does a burr to a horse's tail.

Aconite has been one of the remedies in pneumonia, time out of mind. To-day we find many employing aconitine in preference to the galenic tincture. Of the crystal aconitine 1/800 grain is administered at from fifteen to thirty minute intervals until the pulse drops to 80 per minute, or under, after which the intervals are lengthened to such times as may keep the condition of the pulse steady at such point. This, with veratrine and digitalin, in the full blooded individual, fills the bill as a febrifuge. The small dosage allows of the establishment of the therapeutic effect, without that of a physiologic nature. When there is a sign of faulty elimination, as signified by delirium or other sign, the addition of veratrine 1/134 grain acts as an internal bleeder, thus removing toxic materials with enforced rapidity. The digitalin holds the heart steady and gives it additional strength. These three agents serve to equalize the circulation and to relieve the localized congestion of the lung.

If the remedies enumerated are employed as indicated, and the pulse and temperature are held down as low as possible, it has been noticed that the severity of the disease will be abated, and some insist, aborted. It is a noticeable fact that patients, in whom the fever has been controlled, pass into convalescence by lysis, rather than by crisis, and with greater vitality than do those who have not been so treated.

When drugs of this sort are employed, and only to therapeutic effect, it will be found that expert nursing is not required, as any untrained person, with ordinary sense may be taught how to take the pulse within a few moments, and if the pulse is at 80 or below the temperature will not need to be taken, excepting at the visits of the doctor, and then only to gratify the curiosity of the latter in many instances. Here again appears the superiority of small dosage, as the doctor need have no fear of danger from overdosage, even though his patient is in the hands of the untrained, more especially if he prescribe the number of individual doses to obtain the desired effects under ordinary circumstances, or sufficient to carry the patient to the succeeding visit.

Pneumonia is frequently a secondary matter, in that it follows the reduced vitality of toxemia from intestional origin. This being always in mind, it is well for the physician to look for toxemia in every instance. Reminded that such is practically invariably the case, it is of paramount importance that the bowel be thoroughly cleared out and cleaned up, as the initial advent in treatment. Thereafter it will be found that the symptoms are abated if an intestinal antiseptic is employed throughout the course of the disease. This is a means to overcome infection from this source and to assist in the elimination of toxins already absorbed. The bowels should not be allowed to become constipated at any stage, as this condition favors accumulation of toxin producing bodies, with subsequent toxemia. Such action does away with the necessity of treating two sorts of infection, as is usually the case when this particular point is overlooked.

In asthenic cases, where the vitality is low, strychnine will be found a valuable adjunct, but it is not indicated in every case. This demonstrates again that it is the patient and not the disease, as a disease, which should be treated in every instance.

The cough is of more or less importance, if too pronounced, codeine may be indicated. Some say that expectorants are never indicated, but emetine will be found a valuable adjunct to the treatment. in that it facilitates the throwing off of exudates, thus bringing some relief to the patient. Iodized lime likewise acts well, through liquefying the exudates, and making their expulsion a matter of greater ease. Nuclein is suggested to increase leucocytosis. In the later stages, where the vitality is low, and particularly in older patients, where the exudates are not readily thrown off, sanguinarine will be found an efficient remedy, in that it stimulates the tendency to cough. It is probable that many patients have been saved from "drowning in their own spit" through the timely use of this agent.

The majority of the authorities favor the use of the "pneumonia jackets," but the writer does not believe that they are absolutely necessary, this belief being based upon personal observations in a few cases, occurring in a mining camp of Nevada, where it was impossible to obtain material for

the making of such a protective application. The patients under observation were miners and who wore woolen underwear of some weight. Clean shirts with flannelette gowns were placed on these patients and they all passed through to a happy termination without the use of the jacket. These patients, when being examined from time to time, did not complain of the exposure of their chests, as have others wearing the jackets, and I believe that they were easier at all times because of the lack of the extra protection. When the chest is enveloped in a heavy cotton wool jacket there is no means whereby the perspiration is allowed to evaporate, and the inner portion of the jacket becomes more or less saturated. This does not occur when simple underclothes are worn, they allowing the escape of the sweat, the continuous evaporation tending to assist in lowering of the temperature. The lack of the jacket allows of ready applications to the chest wall.

It goes without saying that the patient should invariably be in a well ventilated room, not too warm, and kept quiet and without visitors, other than the physician and regular attendants. This is of paramount importance, as the patient should be associated with absolutely nothing which will cause the least excitement. One case I have in mind barely escaped a relapse through the visit of a committee from the local union of which he was a member. This visit, which lasted less than a quarter hour, caused a rise of temperature, and slight delirium lasting over several hours.

Alcohol has long been employed in the treatment of pneumonia, some practically considering it one of the specifics. In a mining camp, where every man therein drank more or less, all the cases in which alcohol was a portion of the treatment, the mortality was 100 per cent. Noting this fact, I treated my patients without alcohol in any form, and showed 100 per cent recoveries, strychnine being employed instead of alcohol, when a stimulant was indicated. The secondary, or depressing effect of alcohol, is the contra-indication. Strychnine has no such effect and may be depended upon to maintain its stimulant and tonic effect.

If the patient and not the disease is treated as outlined above, and the remedies pushed as suggested, it will be found that there will be a modification of the symptoms if not abortion of the malady.

PRURITUS VULVAE.—A method of treatment sometimes successful is to apply blisters over the last dorsal and first lumbar vertebæ.—Hospital.

DUPUYTREN'S CONTRACTION SUCCESSFULLY TREATED BY OPEN INCISION AND (THIOSINAMINE) FIBROLYSIN*

By A. H. Tubby, M.S.,
Surgeon to the Westminster and to the Royal National Orthopaedic Hospitals.

The treatment of Dupuytren's contraction by the methods hitherto described has proved, in too many instances, a great disappointment both to the patient and the surgeon; and, looking back on our cases, we have often had reason to feel somewhat vexed with the results. Many means have been tried, and have not, it must be admitted, stood the test of experience. The subcutaneous method of William Adams gave good results, but in very few cases, and those were very early and comparatively slight in degree. In the pre-aseptic days, incision and dissecting out of the affected bands was followed by great scarring of a keloid character, and the last condition was worse than the first. This method was therefore abandoned for a time in favor of the subcutaneous operation.

In the year 1904[1] I published details of a method of incision and clean dissection of all the affected fasciae, meaning by all, that not a single portion of the dense white tissue was left behind, and that the dissection was extended freely and widely into the pearly white lustrous normal palmar fascia. In some instances I have had much reason to be gratified by the result. My best result was achieved in a man aged 50, the subject of acquired syphilis in his youth. There were, however, several cases in which tough linear scars or bands of fibrous tissue reappeared after the operation, and the finger was not freely mobile. Having noted the success of the open incision and application of thiosinamine in the form of fibrolysin, in resistant scars in other places, I applied the method to the hand.

Incidentally I have had the opportunity of making sundry observations upon the nature of the scar tissue. The view has been advanced that the affection may be of bacterial origin, and I was so fortunate as to obtain the assistance of my friend and colleague, Dr. Hebb, of Westminster Hospital, in the examination of the fibrous tissue taken from the palm. In three instances it was found that both aërobic and non-aërobic bacteria were entirely absent, and no culture whatever could be made from the tissue. These few observations seem to me to point to the fact that Dupuytren's con-

*Brit. Med. Jour., Nov. 8, 1913.
[1] Trans. Amer. Orthop. Assoc., vol. xiii, p. 152.

traction is nothing more than a localized fibrositis, occurring in a part which is subjected to pressure, sudden strains, and blows, and is indicative of a fibroid change associated with that arterial hardening inseparable from advancing years. It is noteworthy that occasionally we find an instance in the female sex, especially in those who have done much housework, but I have never seen it in females of the upper and middle classes. In two striking instances I have met with Dupuytren's contractions in both hands, and a simultaneous fibrous condition of the plantar fasciae.

To resume the question of treatment: An Esmarch's bandage is applied round the arm, a longitudinal incision is made over the most prominent portion of the band in the palm, and, if necessary, cross incisions are made at the other end. Flaps are then dissected out and turned back; this is, perhaps, the most difficult part of the operation, as the skin is closely adherent to the affected fasciae, and great care is necessary to avoid button-holing. The flaps are held back, not by metal retractors, but by a thread of silk passed through each one and tied at the back of the hand. The digital nerves are then localized at the roots of the fingers, and, having due regard to their integrity, every portion of the affected fascia is dissected away. It is necessary to be careful at those places where it is adherent to the sheath of the tendon, and it is advisable to leave a very thin film of sheath in order to prevent adhesion of the tendons to the skin of the hand. The Esmarch's bandage is now loosened and any hemorrhage is arrested by pressure and the application of hot water. Fibrolysin is now poured on the open wound and thoroughly well rubbed in for two minutes, and in those cases in which the fibrosis has been extensive a couple of drops are injected at five or six spots around the margins of the dissected area. Where the fingers are not extensively involved, the nodules may be dissected from them and fibrolysin applied in the same way. Where, however, the area is so extensive and the skin is so puckered and adherent that satisfactory dissection is impossible, I have divided the bands subcutaneously and stirred up the nodules freely by inserting a tenotomy knife into the scar tissue and turning it around many times. If fibrolysin is then injected, it seems that such trauma is followed by the disappearance of the nodules, precisely in the same way as occurs in the treatment of ordinary scar tissues in the skin. The flaps in the palm are then most carefully sutured with horsehair, particular care being taken to adjust them at the junctions of the cross-incisions with the main one. The hand is then put up with the wrist and fingers in the fullest possible extension on a malleable iron splint for fourteen days.

An ideal result is usually obtained; by ideal I mean a perfectly soft and supple palm, without any scar tissue in it, and with free mobility of the fingers. In every case, however, the results of this treatment have proved infinitely superior to those following either the subcutaneous section, or open dissection without the use of fibrolysin. And it is my belief that the method now described will prove a lasting success.

THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE SIGMOID FLEXURE OF THE COLON *

By H. W. Soper, M.D., of St. Louis

It is not my purpose to mention in this paper all the diseases of the sigmoid flexure, but to speak particularly of that class of cases that are amenable to treatment by minor surgery or medical methods rather than by radical surgical procedure.

The sigmoidoscope, which was first devised by Howard Kelly, has undergone many improvements and modifications. The one used by me is Tuttle's modification of Strauss' instrument, with the exception that the tubes are five-eighths inch in diameter instead of the usual three-fourths inch. They are consequently much lighter and can be introduced with less discomfort to the patient. Three lengths are employed, 8-inch, 10-inch and 12-inch. If at all possible, the knee-chest position should always be used in sigmoidoscopy. In this position the air rapidly distends the ampulla recti and greatly facilitates the passage of the instrument. It is rarely necessary to use the inflating attachment. Should muscular contraction prevent further progress of the tube, gentle pressure with the cotton applicator is usually sufficient to overcome it. The oil applicator as recommended by Boas and Strauss is often useful, but may dim the light.

After the tube has been passed through the sphincters the obturator is withdrawn and further progress made under the direct guidance of the eye. Schreiber[1] and Strauss[2] have both made careful measurements in centimeters and have given definite rules as to the exact distance the next turn is to be expected. This is really not neces-

*Read before the St. Louis Soc. of Int. Med. Jour. Mo. State Med. Assn., Oct., 1913.

[1] Julius Schreiber: Die Rekto-Romanoskopie, Berlin, 1903, Aug. Hirschwald.

[2] H. Strauss: Prokto-Sigmoidoskopie, Leipsic, 1910.

sary, but a good working rule is to search downward when the tube has been introduced a distance of 5 to 6 inches; i. e., the proximal end of the tube should be raised, as the loop of the sigmoid usually falls forward when the patient assumes the correct knee-chest posture. It is only in rare cases that one is able to introduce the tube further than 10 inches; as a rule, the 8-inch tube is the most useful. Further progress, as Schreiber has shown, is often an illusion; the elastic sigmoid mesentery stretches and permits only an apparent and not a real passage of the tube through the lumen of the bowel.

The preparation of the patient preliminary to examination is of importance. Cathartics given too soon before the examination interfere with the peristalsis and produce contractions of the bowel which may result in erroneous conclusions. A good practice is to make the fist examination without any preliminary treatment whatever. Very often masses of fecal matter in the dilated ampulla recti may be avoided and the tube passed up into the sigmoid. If fecal matter obstructs the view, an enema of oil may be given the night before the examination is to be made, followed in the morning by a cleansing warm-water enema. It is preferable to allow from six to eight hours to elapse after the water enema, because if made too early troublesome contractions are likely to be met with.

Chronic Spastic Contraction of the Sigmoid.—Normally there is a tendency for this portion of the colon to be in a state of tonic contraction. However, as viewed in the knee-chest position, the folds readily separate and several inches of bowel are seen beyond the end of the tube. In chronic spasticity the tube enters with great difficulty. Every inch of the way is combated by a steady contraction. Within the folds of mucosa small hard masses of fecal matter are often met with; the mucosa frequently shows evidences of mild inflammatory processes. Externally, the loop of the sigmoid, as well as part of the descending colon, may be palpated as a finger-like cord, often tender to pressure. The feces have a characteristic fragmentary appearance. The resulting constipation is very obstinate. In some cases a daily evacuation may occur, bot it is incomplete and fecal stasis results in the cecum and transverse colon.

Treatment.—Cathartics must be avoided, as they invariably increase the tonic contracture of the bowel. Direct massage is also contra-indicated for the same reason. The diet should be rich in cellulose and sugar, provided the stomach will stand it. The regular administration of agar-agar is of great value. In severe cases an enema of 6 to 8 ounces of sterilized cottonseed oil should be given each night and retained until morning. An enema of water should be avoided, as it stimulates further contraction and very often produces pain. Many cases present a concomitant spasticity of the entire colon, and very frequently an atonic condition of the stomach is present. This symptom complex occurs almost invariably in the congenital enteroptotic type, and may be regarded as a disturbance in the general tonus produced by defective innervation. The treatment of this class of cases broadens into an attempt to improve the general nutrition of the nervous system.

Chronic Atony of the Sigmoid. — This condition is frequently seen in the aged, and particularly in patients of all ages who have used the large water enemata for any considerable period of time. The ampulla recti appears much larger than usual, the valves often being absent or very indistinct. Large masses of fecal matter are usually encountered, the sigmoid is entered easily and very little tendency to contraction is observed. The treatment consists of the same dietetic regime as in the contracted form. Direct massage and abdominal muscle exercises are indicated. Small cold water enemata and cold compresses to the abdomen are helpful. In severe cases pure fluid extract of cascara, given regularly in graduated doses before meals, just sufficient to produce a daily evacuation, may be resorted to.

Amebic Dysentery.—The diagnosis is greatly facilitated by means of the sigmoidoscope. The lesions have a characteristic appearance; the small superficial ulcers covered with a light layer of gray mucus, which, when wiped off, leaves a granular red surface which oozes bright-red blood. If a small cotton applicator is used the mass of mucus may be more readily transferred to the slide for examination. In ten cases I examined these lesions in the sigmoid were always present. Often careful feces examinations failed to reveal the presence of the ameba, but the small mass of mucus taken directly from the lesions by means of the sigmoidoscope contained many of them. These lesions often persist in cases which have been thoroughly treated by the ipecac salol coated capsules, and which appear to have made complete recoveries. I employed ipecac locally by means of the sigmoidoscope and dry powder insufflator after the method devised by E. Rosenberg in Albu's

clinic. This method invariably caused severe irritation as well as nausea and vomiting. Even in dilution with bismuth, 1 to 10, local irritation was produced. After considerable experimentation with several different powders, a mixture of tannin and bismuth, 1 to 10, was found to be most efficacious in clearing up the lesions and destroying the organisms without producing irritation or congestion of the mucosa. The tube is inserted eight inches and the powder blown in as the tube is gradually withdrawn. The entire wall of the bowel can thus be coated with a thin layer of powder. A few daily applications often suffice to heal the ulcers and completely destroy all the amebæ.

Subsequently this method was used in conjunction with the ipecac capsules by mouth, with very gratifying results. Six cases were completely cured; i. e., no relapses occurred within two years. Two cases passed from observation before the treatment was completed. However, both showed much improvement. One inveterate case of ten years' standing resisted all methods of treatment. He had ten thorough courses of ipecac always with great improvement. The sigmoid lesions were completely cleared up, always to return. Axisa's[3] recommendation of the Kossam treatment was followed in this case with no benefit whatever. A second trial of this drug was made in a severe case with no benefit. This second case was finally cured combined with the tannin and bismith powby the administration of the ipecac pills der insufflation.

Simple Ulcers and Inflammatory Processes.—Simple ulcers and inflammatory processes are best treated by Rosenberg's dry-powder method. It seems to be of but little conequence just what powder mixture is used. I prefer the tannin and bismuth 1 to 10.

Diverticulitis of the Sigmoid.—The diagnosis of this condition before the formation of a large abscess or before obstruction or perforation occurs, appears to be very rare. Dunn and Woolley[4] report one early case of recovery after operation, two cases of death following operation for obstruction and three cases in which the diagnosis was made at autopsy. C. A. Powers[5] reports one early case in which recovery was prevented because of the onset of postoperative pneumonia. Three cases were seen by me, all late in the course of the disease after large abscesses had formed. In all three cases rupture had occurred into the bowel and the pus was draining freely. The symptoms were the same as those presented by the ordinary attack of slow pus-forming appendicitis, except that the left inguinal region was involved. In each case the expectant plan of treatment was followed. Magnesia sulphate was given in doses sufficiently large to keep the bowel well cleared of fecal matter. Enemata were avoided for fear of washing material back into the abscess cavity. In all three cases complete recovery resulted without sequelae or recurrences.

Single and Multiple Adenoma and Adenocarcinoma of the Sigmoid.—The multiple adenocarcinoma of the colon is not considered here, but the cases reported are limited to growths occuring only in the sigmoid.

Case 1.—Dentist, aged 55, presented himself in February, 1910, because for several months he had observed small masses of blood in the feces. He had been troubled by hemorrhoids and spastic constipation for many years. Had been treated for colitis by local and internal medication. A sigmoidoscopic examination revealed the presence of six small growths in the sigmoid, seven inches from the anal margin. The growths varied in size from a small pea to a hazelnut. The largest one was pedunculated about three-fourths of an inch in length and at the end showed a typical cauliflower-like growth. A snare was devised and the end of the growth pinched off for examination. It proved to be carcinoma and the entire lot was removed. The large one was pinched off by the wire snare, but only the soft part of the growth came away, leaving a central stem of tough connective tissue about the size of a match. After considerable trouble the connective tissue center and base were finally destroyed by the electrocautery. The small growths, which were from one-fourth to one-half inch in length, with broader bases than extremities, were curetted and the bases cauterized in the same manner.

Sigmoidoscopic examination from time to time, the last one made about a month ago, showed no evidence of recurrence. The pathologist's report is as follows:

This material consisted of several blood-stained, soft, yellowish or gray curettings. The largest measured 6 mm. in diameter. Sections of this (paraffin) show an adenomatous growth of the intestinal gland. The epithelial cells in many places show great variation in size and shape and they have lost their glandular arrangement and columnar character. They have both filled the lumen and broken through the basement membrane. Some of the cells are seen loose in the adjoining stroma.

The diagnosis is therefore a malignant adenoma. The smaller bits of the material did not show a tendency toward malignancy, but resembled the picture of a benign adenoma or polyp.—D. L. Harris, M. D.

Case 2.—Merchant, aged 54, came under observation in October, 1910. Had suffered from chronic spastic constipation for years. Had noticed a little blood in the stool from time to

[3] Edgar Axisa: Die Amoben-Dysenteric, Archiv. für Verdauungskr., 1910, Bd. XVI, H. 6. S. 667.
[4] Dunn and Koolley: Am. Jour. Med. Sc., July, 1911, No. 1, p. 15.
[5] C A. Powers: Tr. Am. Surg. Assn., abstr., Jour. Am. Med. Assn., July 27, 1912, p. 301.

time. The sigmoidoscope revealed the presence of two growths seven inches from the anal margin. They were about three-quarters of an inch in length, the bases only slightly smaller than the extremities. A new snare was devised, and with the aid of Jackson's bronchial instruments, slightly modified, they were much more readily removed than those in Case 1. The bases were cauterized by means of the chromic acid bead (as used by rhinologists). A small but sufficiently deep eschar results, which heals within a few days. This case has also been kept under observation since, with no evidence of recurrence.

Similar adenomatous growths were removed in the same manner in five other cases. Three of them presented no symptoms but constipation, two having in addition observed small masses of blood in the feces. Each case presented a spastic condition of the sigmoid and all of the growths were located in the same region.

In all probability the contracture of the bowel is a factor in the etiology of the growths, possibly by interference with the blood-supply. No pain is experience by the patient during the operation, unless considerable traction is made or too much inflation is employed. Both procedures have the effect of increasing the tension, and the pain which results is no doubt explained on this hypothesis, being in accord with the observation of Hertz,[6] "that the only immediate cause of true visceral pain is tension." Not only is the normal mucosa devoid of sensation, but the diseased and ulcerated surfaces as well.

Case No. 1 demonstrates that malignancy may develop in these benign growths. Strauss reports a similar case and mentions two cases of carcinoma near which small adenomata were observed, suggesting the idea that the cancerous growth probably developed from such a benign tumor.

Finally, it is obvious that the small adenomata are dangerous and it should come within the province of the physician to detect them early and remove them by this simple method. Even when malignancy begins, it is possible to destroy the growth completely without resorting to resection of the bowel. The case should be kept under observation and should infiltration of the mucosa, or any other sign of recurrence appear, surgical intervention must be prompt.

Wall Building.

IN DETERMINING whether or not a female has been infected with gonorrhea, withhold definite conclusions if there are no early evidences. The first manifestation may be a salpingitis several weeks after the suspicious intercourse.—American Journal of Surgery.

[6] Arthur J. Hertz: The Sensibility of the Alimentary Canal, 1911. Oxford Univ. Press.

THE EUSTACHIAN TUBE*

By G. R. S. Corson, M.D., of Pottsville, Pa.

ONE has but to look through an index of the articles written on otological subjects to be impressed with the fact that very meager consideration is given this little air passage which plays so important a rôle in the work of the otologist. Seldom is anything said concerning it at our conferences and little written on it in our journals. We will agree, I think, that a very large percentage of our multitudes of cases of tympanitis is due to interference in the normal patency of this tube.

A more thorough study of the various pathological conditions of the part under discussion seems to be called for, and the application of certain principles in the way of treatment is needed if we are to accomplish the desired results. Its very position and shape makes it liable to become obstructed. The pharyngeal orifice is its largest portion and opens downward, forward and inward. The first inch as it passes toward the tympanum is directed upward, outward and backward, and is called the cartilaginous portion and lessens in caliber like a gradually tapering funnel, until it joins the bony part of the tube, at which point it is narrowest and is called the isthmus. The osseous portion extends about a half inch further and opens into the tympanum just above the middle of its anterior wall.

The two portions of the tube differ widely in some of their anatomical features. The mucous membrane of the pharyngeal portion contains columnar epithelial cells and a glandular layer with a small amount of fibrous tissue, while the tympanic portion contains flat ciliated cells and less glandular structure with a very considerable amount of fibrous tissue. The lower portion is inclosed by cartilage behind, above and partly in front, while the rest of the anterior portion and below is inclosed by loose fibrous and connective tissue. The walls are in contact except during the act of swallowing or when for any reason there is increased air pressure in the nasopharynx.

The canal is irregularly triangular in shape and on section in a quiet state looks like a curved slit, the amount and degree of the curvature depending upon the part of the tube observed. We have observed several cases in which the cartilage of the posterior wall was abnormally long and projected into the pharynx so that with the

* Read before the Med. Soc. of State of Pa., Pa. Med. Jour., March, 1914.

mucous membrane, which is always thickened in this location, a sort of flap or valve was formed which closed tightly the orifice of the tube to inflation by the Valsalva and Politzer methods, but catheterization was easily accomplished.

There are many conditions of the nose and nasopharynx which affect the eustachian tube, such as deformities of turbinated bones and nasal septum, adenoids, enlarged tonsils by interfering with the blood supply, various infectious diseases, particularly the exanthemata, and systemic diseases such as syphilis, rheumatism and gout. The one condition with which we have to deal as a result of one or more of the above diseases or pathological conditions, and which we wish to consider here, is more or less complete stricture of the tube. Bryant says that organic stricture of this tube is rare. He designates the inferior turbinate and adjacent area to the fossa of Rosenmuller including the tube, "the auditory region of the nose." When we consider the important relation these structures bear to the functionating of the middle ear, we feel it ought to be called "the nasal portion of the ear." Strictures nearly always occur in the vascular portion of the tube, which is the cartilaginous. Any of the above mentioned diseases or conditions will disturb the normal vascular equilibrium of the nasal region of the ear and a catarrh is set up in the tube.

Such a process continued, leads to a hyperplasia of the tissues surrounding the tube. This tissue sooner or later becomes fibrous in character. These changes are particularly prone to occur in the cartilaginous portion of the tube and at the isthmus. This constricted bony canal has but little room to spare for any vascular engorgement or hyperplasia of its lining membrane.

This membrane toward the pharyngeal opening lies in folds and will tolerate considerable swelling and still remain patent, while that lining the osseous part of the canal, particularly the isthmus, is easily occluded; hence it is that the most common site of stricture is to be found at the isthmus. It may also be due to cicatricial contraction from syphilis, scarlatina, diphtheria or trauma. They may vary in caliber from a slight thickening sufficient to prevent the passage of air under ordinary circumstances, as in swallowing, to absolute stenosis when the smallest bougie can not be passed. Many competent observers have told us how to locate and measure the stricture, a subject which we will pass by and devote our attention to a more rational treatment of the pathological condition.

Given a case of stricture with all its train of symptoms and consequent associated conditions of the ear, many of us are inclined to think we have done our whole duty if we have corrected nasal deformities, removed diseased adenoids and tonsils and in other ways removed what we believed to be the causative factor or factors and perhaps made some medicated applications to the nasopharynx and perhaps to the mouth of the tube itself. As well might we advise our friends doing genito-urinary work to touch the meatus with silver for a stricture of the urethra and hope to have their sufferers line their pockets with gold.

We as otologists are profoundly indebted to Dr. Sidney Yankauer for his thorough and original work on tubo-tympanic trouble, and I take the liberty of quoting him quite freely and urge that you read his thorough article on "The Isthmus of the Eustachian Tube," published in the "Laryngoscope" of July, 1910. I also want to show some of the instruments devised by him and others, which I use in treating this troublesome affection. Dr. Holmes, of Boston, also has done splendid work on this line.

The rare organic stricture which I have never encountered should be cut, if a filiform could be first passed. There are many times when a tube seems impassable to a bougie, and it can be opened by the following procedure: Introduce a good-sized catheter and then with Yankauer's applicator carrying a very small amount of cotton wound tightly about it, with a solution of 5 per cent. cocaine and 1:2000 adrenalin, pass it through the catheter until it enters the tube and meets the constriction. Then press very gently with the applicator against the obstruction for a few minutes, and as the tissues are reduced the applicator will enter further into the tube. The operator should have several applicators handy and ready armed, as the very small amount of cotton does not carry much of the solution and it is soon all absorbed. With much patience and perseverance very tight strictures may be passed in this way.

This temporary opening of the tube, by depleting the lining membrane and perhaps some subadjacent tissues, should be immediately followed by graduated bougies, preferably of whalebone. Begin with a smaller size and increase until the largest size is found which will pass the narrowing in the lumen. It may require considerable

time and steady pressure on the bougie to pass it; when once accomplished a gradually tapering flexible sound should be passed and left in the narrowest part of the constriction for ten minutes. On removing the sound and applying moderate air pressure through the catheter, air will be found to pass freely into the tympanic cavity as recognized by the auscultation tube. I would emphasize the advantage of the sound over the olive-shaped tipped bougie for purposes of dilatation after the bougie has been passed.

To my mind this is the time to begin the real treatment of the condition. Once having the tube open for its entire length, applications of various medicaments may be made directly to the mucous membrane of the entire tube. Some form of silver answers very well, say, silver nitrate solution, thirty grains to the ounce, but I prefer argyol in concentrated solution of 50 per cent. We also use equal parts of compound tincture of benzoin and boroglycerid of tannin if the tissues are not too fibrous, as evidenced by the readiness with which they yield to the cocaine and adrenalin, with very satisfactory results. This treatment should be carried out once in two days, and if care is observed in the technic very little reaction follows. The essential point in carrying out this procedure is thoroughly reducing the swelling or enlargement of the blood vessels, which not only allows the passage of the bougie more freely and permits of applications being made to the constricted part of the canal, but straightens out the folds of its mucous membrane, thus allowing the medication to come in contact with every part of its surface.

Of course the bougie and applicators should all be plainly graduated and a standard size and length used. The distance from the end of the catheter to the isthmus in the adult is about twenty-four to twenty-five millimeters, and varies but little, but on the other hand the distance it may project from the catheter until it becomes visible behind the anterior margin of the drum membrane varies from thirty to thirty-eight millimeters.

It is important that the tube is sufficiently patent to allow not only of proper inflation, but that the positive pressure of air in the drum may also freely escape. Hence we believe no considerable force should be used in inflation unless we are satisfied the tube has been sufficiently opened to allow a true balance of air pressure on both sides of the drum membrane.

To sum up, then, the constricted portion of the tube should be treated as follows: (1) The application of cocaine and adrenalin solution to the region to and just beyond the isthmus; (2) the passage of the largest possible sound for five to ten minutes; (3) the application of 50 per cent. solution of argyrol, and (4) inflation and deflation without much force. For old and stubborn strictures a more frequent and prolonged use of the sounds must be made, even to its daily application. The size of the sounds may also be increased.

Now let us consider briefly the treatment of the tube from the tympanic end and through the external auditory canal and drum.

Dr. Yankauer found quite by accident that in case of atresia of the tube after a chronic suppurative otitis media the discharge lessened or ceased, and laid down this rule or law: "When the eustachian tube has been permanently closed by organic atresia at the isthmus, a perforation in the drum membrane will never close, but will tend to become larger."

He reasoned that the source of the profuse discharge was largely from the nasopharynx, and reported twenty-one cases in July, 1910, in which he had closed the tube at the isthmus with a curet by the tympanic route. He reported nearly all of them cured, and most of them after a period of two years. That is, the discharge had ceased and the inner tympanic wall had the dry appearance of skin. There was no considerable effect on the hearing.

TREATMENT OF CHRONIC NEPHRITIS*

By James Tyson, M.D., LL.D., of Philadelphia

The treatment of acute nephritis is comparatively simple, consisting for the most part in rest, a liquid and semi-liquid diet, with a minimum of proteid, along with depletion by the bowels and skin. Most cases of acute nephritis are cured by these measures.

The treatment of chronic nephritis is a different problem requiring much more experience and trained judgment to qualify for it, for several reasons. In the first place, the degree of structural change, to which the term inflammatory is applied with scant accuracy, varies greatly, from changes scarcely appreciable and harmless to a severity which leads inevitably to a fatal termination. Second, some difference of treatment is required by the varieties of what is known as chronic nephritis. Final-

* N. Y. Med. Jour., March 28, 1914.

ly, modifications of treatment are rendered necessary by symptoms and complications which are much more varied and numerous in chronic than in acute nephritis. My own experience has taught me that it may be arranged most satisfactorily to meet three chief indications:

First, to protect the system against toxins which tend to accumulate in the blood because of deficient elimination by the damaged kidney; second, to protect against complications and certain grave symptoms and their consequences; third, to restore the normal structure of the diseased organs.

The first indication is met by cutting out proteid foods whence for the most part arise the toxins referred to, and, second, by stimulating the function of organs other than the kidneys whose office it is to supplement the renal excretion. The proteid foods referred to are represented especially by meats. Other proteids are the gluten of bread, the casein of cheese, and the yolk and white of egg, the former containing as much and more albumin than the white. An important practical question relates to the rigor with which such exclusion is carried out. Shall all meat be excluded? Except in cases in the throes of uremia or threatened uremia—no. Again, there is no one kind of meat which is practically more harmful than another. The red meats, which have borne for many years the special stamp of danger, are no more harmful than white meat, the small additional quantity of blood which produces the red in the former going for naught. Thus the monotony of a diet which permits only white meats is escaped. As intimated, except in the case of actual uremia, it is sufficient to reduce meat foods to a minimum, just enough to give a relish to the meal, say, two ounces daily, represented by such light stuffs as bacon, very palatable when thoroughly done and of which the fat also is not contraindicated. The same may be said of eggs, of which one or two a day cooked in any way may be permitted in cases of chronic nephritis without active symptoms. The proportion of proteid contained in bread is not regarded as sufficient to demand reduction to any positive degree. The same is true of the cereals and the soft juicy vegetables, which are excellent foods for the disease under consideration. The casein of cheese seems to be less harmful than the proteids of beef, beef extracts, and beef teas, and may be also moderately allowed. Beef extracts are especially objectionable. It is not proposed to discuss these at this time. Suffice it that they contain substances which are poisonous, substances which the normal kidneys remove from the blood, but for which function they are disqualified when diseased.

Quite as important as the quality of food is the quantity. Overeating is often the cause of nephritis; especially therefore should it be avoided by the nephritic. Milk and cream are ideal foods for him, and the cereals fill a like rôle. Their combination is even better. Sweets are not contraindicated, except when taken in such quantity as to derange digestion. Alcohol, being an irritant to the kidney, should not be used by the chronic nephritic, though it may be used in emergencies when stimulants are needed.

Having cut down proteid foods and substituted others, the next step is to stimulate the excretion of the toxic products of deranged proteid metabolism. Intangible as these substances are—be they protein, urea, nitrogen, creatinin or purin bodies—they are removable from the blood by the skin and bowels as well as by the kidneys.

The functions of the kidneys are stimulated by the saline diuretics, of which potassium citrate is the type and by the alterative diuretics, as iodine and calomel. These offices are, however, variously limited by the diseased state of the kidneys, and we must look elsewhere for supplemental function. Such is found in the bowels and skin, while experiment goes to show that bowel elimination is the more effective, so much so as to have suggested to Professor von Noorden the graphic remark made in my hearing some years ago when discussing this subject: "In a case of nephritis don't cure a complicating diarrhea." Free purgation is the means, of course, by which the bowels are to be availed of, and here again the salines are our sheet anchor, not only because they stimulate excretion, but also because they are less irritating and exhausting than elaterium, jalap and others of this class. The bowels should be kept free, therefore, by salines, either in the shape of the natural mineral waters or such members of this group as magnesium sulphate, sodium sulphate, sodium phosphate or Rochelle salt. These should be supplemented by an occasional dose of blue mass or calomel, followed by a saline on the following morning.

The skin is also an efficient agent in eliminating toxins. It is availed of most effectually by the hot pack, the hot air bath, hot vapor bath or electric light bath. One of these should be given twice a week or

oftener, even daily when the case demands it. It is usual to allow the patient to remain in the bath for fifteen or twenty minutes after the sweating has commenced. Less urgent indications are met by the nightly warm bath, which removes dead epithelium and promotes the action of the skin. Pilocarpine hydrochloride or nitrate in moderate doses, say, one twelfth of a grain, increased to one-sixth, may be used to stimulate the action of the skin. A very efficient remedy is the official solution of potassium citrate in half-ounce doses with half a dram of sweet spirits of nitre and a few minims of tincture of squills, every two or three hours. It is an admirable diuretic as well as sudorific, and acts also moderately on the bowels.

The differences of treatment called for by the different forms of chronic nephritis are not great. In chronic intestinal nephritis there is more extensive destruction of renal epithelium, and in a general way supplemental measures to secure elimination should be more active and the patient more closely watched because he is in greater danger. Unfortunately many of the milder cases of interstitial nephritis are not distinguishable from those of parenchymatous nephritis, and on this account vigilance should be exercised over all cases of nephritis. The presence of albuminuric retinitis, although not limited to interstitial nephritis, is presumptive evidence of its presence.

An important measure of treatment in chronic nephritis is the regulation of work, exercise and rest. Many patients with mild cases are unconscious of symptoms; in others symptoms are so mild as to attract little attention. There are none, however, which are not more or less influenced by rest and exertion in whatever way these are practiced. Muscular exercise is a promoter of albuminuria, even in health. A patient must, therefore, graduate his work and exercise so as to produce a minimum of albuminuria. Except the grosser symptoms of the advanced cases, such as dropsy and its results, a sense of fatigue or weakness is the only indication of a failing strength which demands rest. Yet the weary feeling is produced by many conditions other than nephritis. An examination of the urine might aid us. The finding of albumin and casts increases the probability of nephritis as a cause, but does not make it certain. The nephritis once established, the amount of rest and exercise, including work, must be adapted to its consequences. Many patients with mild nephritis can work sometimes to their advantage. On the other hand, it is needless to say, that to attend store from 6 o'clock in the morning to 12 at night rapidly aggravates the disease. Fortunate is the patient who can afford an automobile and thus secure the benefit of outdoor life without fatigue.

There can be no doubt that the kidney is subject to structural repair. This has been shown by experiment on animals as well as in efforts at repair of acute lesions as disclosed at autopsy in human beings; but I know of no medicine or food which will directly help to restore the normal structure of a chronically inflamed kidney. All that can be done is to place the patient under such conditions as favor repair, and give Nature the best chance to exert her recuperative tendency.

All that promotes natural and normal function and maintains normal circulation, tends to promote healing. All that interferes with normal circulation and normal excretion, tends to keep up the diseased state. The overgrown connective tissue of the cirrhotic kidney seems to be invulnerable to all drugs which have been directed against it. The iodide of potassium, the great destroyer of certain kinds of fibrous tissue, seems to be without effect on the fibrous tissue of the contracted kidney, although some German clinicians hold that in all cases of interstitial nephritis the iodides should be given continuously in such doses as are easily borne. The proliferated and packed epithelium of parenchymatous inflammation appears to retain better the ability to function, and there seem to remain areas of sound tissue which supplement deficient excretion in those parts of the kidney which have undergone degeneration. At all events, this form is less likely to be attended by uremia.

The complications of chronic nephritis are numerous, but only a few demand detailed consideration. They include bronchitis, edema of the lungs, pneumonia, pericarditis, more rarely endocarditis, pleurisy and effusion into the serous sacs. Derangements of digestion succeed on chronic nephritis and are probably therefore more frequently results, but not rarely they are the first symptoms to attract attention. Then closer examination will find other symptoms of nephritis. Pseudomembranous enteritis is sometimes seen as a terminal infection.

Among symptoms requiring special or modified treatment are uremia and edema, general and local. Uremia is the most alarming and dangerous symptom. It is acknowl-

edged to be more frequent in chronic interstitial than in parenchymatous nephritis. Occurring often suddenly when least expected, its treatment should be correspondingly prompt. Fortunate are we if premonitory symptoms present themselves, such as drowsiness, intense headache, or vomiting of matters laden with urinary constituents. A brisk purge, a sweat or a blood letting may avert the threatening convulsion and coma. A coincident hypodermoclysis or intravenous injection of a pint of normal salt solution will aid in eliminating these poisons. It should be associated, however, with a blood letting, with the blood pressure as high as it usually is in uremic coma. This is important, for the intravenous injection without the removal of a corresponding amount of blood may produce excessive intravascular pressure and death.

More fortunate still are we if the phenolphthalein test informs us that the sufficiency of the kidney is greatly less than normal, when a similar treatment may be equally efficient. The presence of coma or convulsions militates against the usual modes of giving medicine. A couple of drops of croton oil mixed with a teaspoonful of plain oil may be carried to the back of the tongue, or one-sixth grain of elaterium or one-twelfth grain elaterin dissolved in a small quantity of water. Chloroform may be inhaled to control the convulsions. After the purgative has had its effect, an enema of chloral in solution, as much as a dram of the drug in four ounces of water, may be given to supplement the effect of ether and to continue it. Simultaneously, or in close association with these measures, is the sweating which may have been used in the initial stage of treatment. The best method of securing sweating at this stage is by the hot pack or vapor bath. The fluid extract of jaborandi or pilocarpine hydrochloride may be used to facilitate the action of heat, small doses such as a quarter of a grain of pilocarpine being sufficient when combined with the heat; while large doses, though more active, are apt to produce edema of the lungs. Should this complication occur, 1/100 grain of atropine hypodermically will commonly dry up the exudation. This dose may be repeated. Uremia is sometimes mistaken for the delirium of cerebral arteriosclerosis, an error to be guarded against.

For edema and general anasarca much the same treatment, modified according to the exigencies of the case, is indicated, associated also with diuretics like digitalis, acetate and citrate of potassium, and the theobromine derivatives, including especially acetotheocin. Extreme degrees of anasarca may require incisions or Southey's tubes to draw off the serum. Excellent results have followed this treatment. I prefer incisions behind the ankles; when dressed antiseptically they are less uncomfortable than the Southey's tubes and less likely to cause local irritation.

Operative treatment. — The operative treatment of chronic nephritis—Edebohl's operation—is not resorted to as often as it should be. It is indicated in all cases which have resisted after a fair trial the usual remedial measures. Although complete cures are claimed for it, I have never met them. On the other hand, I have seen the most marked improvement, an improvement which might be characterized as "almost a cure," with a prolongation of life for several years in comfort and safety. The operation is free from risk if it is not deferred until the disease is so far advanced that death is liable to occur at any moment.

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DIAGNOSIS AND TREATMENT OF PYELITIS*

By C. C. Coleman, M.D., of Richmond, Va.

Statistics collected by Stanton from a number of American hospitals where the cystoscope and *x*-ray are routinely used in suspicious cases show twice as many surgical lesions of the kidney as do the records of those hospitals in which such patients are investigated after the older methods.

The errors of diagnosis in surgical diseases of the kidney arise, in most instances, from the failure to employ accepted clinical and laboratory tests rather than from the lack of proper facilities for diagnosis. There is not often a necessity for exploratory diagnosis in diseases of the kidney. An operation upon this organ, indicated after a careful investigation of the patient, is entered into by the surgeon with a clear idea of the pathologic problems and the therapeutic indications. With such means of investigation as we have at our command, the study of the symptomatology and pathologic physiology of disease of the kidney yields more definite results than that of any of the internal organs of the body.

Much has been gained in recent years by a correct interpretation of the bladder symptoms which may occur in the various

*Read before the Med. Soc. of Va. Va. Med. Semi-Monthly, Feb., 1914.

renal infections. Disturbance of the bladder may be the sole expression of a serious lesion in the kidney, and a common mistake has been to treat the symptomatic manifestation of the bladder without an investigation of its cause, which may be in the kidney This is true especially in female patients in whom chronic cystitis is exceedingly rare as a primary condition.

Pyelitis is a very common disease of the kidney, requiring, as do many other affections of this organ, the employment of modern methods of diagnosis for its prompt recognition and proper treatment. By utilizing the recent advances in diagnosis and treatment simple pyelitis has been almost entirely removed from the class of diseases of the kidney requiring surgical operation.

Pyelitis is sometimes a complication of the infectious fevers. It is frequently secondary to many of the purely surgical renal conditions such as pyelo-nephritis, renal tuberculosis, calculus or anomalous vessels. I shall deal with pyelitis, however, as a simple uncomplicated catarhal inflammation of the pelvis of the kidney, which should be readily recognized.

Pyelitis is frequently overlooked. It is often diagnosed as malaria or in many instances considered as an inflammation of the appendix or gall bladder.

The tendency toward periodicity of attack, together with its sudden onset, partially explains the incorrect diagnosis of malaria, while its more frequent occurrence on the right side and the associated abdominal disturbance frequently present, may lead to an erroneous diagnosis of appendicitis or cholecystitis. An attack of acute pyelitis begins rather suddenly with pain in the lumbar region. There is tenderness in the costo-vertebral angle, and rigidity of the lumbar muscles of the same side. The character of the pain varies. It may be either dull or severe. The pain sometimes radiates along the ureter or transversely across the adomen. In some cases the greatest pain may be located in the region of the opposite kidney. The temperature fluctuates between 100 and 104 or 105, and there may be irregular chills. There is enlargement of the infected kidney and it may be palpated. Urination is frequent but not painful. There are present all the phenomena of a septic process, such as headache, rapid pulse, loss of appetite, constipation and elevation of the leucocyte count. The polynuclears are proportionately high. The urine is usually acid and contains pus, epithelial cells, bacteria, albumen and a few red blood cells. The amount of pus varies greatly and repeated examinations of the urine are necessary to obtain a correct idea of the extent of the suppurating process. The acute symptoms of such an attack will usually subside in from several days to a week, though for a considerable period of time the patient may show the effects of illness. The tenderness over the kidney persists indefinitely and the urine contains pus for several weeks.

These attacks may be repeated and a chronic pyelitis result, which continues until serious damage is done to the parenchyma of the kidney.

In marked contrast to the acute type of pyelitis there is a form of this disease in which the onset is very insidious. In such cases there may be few symptoms of a renal infection. The general impairment of the patient's health, with the associated bladder disturbance, should direct attention to the kidney.

Hematuria is not generally a feature of inammation of the pelvis of the kidney. though it is occasionally present. These cases have been described as pyelitis granulosa. In such cases the pelvis of the kidney and upper ureter are deformed by the contraction of the scar tissue produced by the long continued diffuse inflammation. The hemorrhage is due to an involvement of the renal papillae by the inflammatory process. This type of pyelitis is not accompanied by pain unless the ureter is obstructed by a blood clot or pus.

While the history and physical examination have some value in establishing a diagnosis of pyelitis, we must rely not only on the urinary findings, but mainly on such objective signs as can only be furnished by a cystoscopic examination and ureteral catheterization.

In spite of the recognized value of the cystoscope in genitourinary diagnosis, it is a fact that only a small percentage of patients afflicted with surgical disease of the kidney and bladder are given the benefit of this important method of examination. Failure to emplov this instrument in cases of chronic disturbance of the bladder frequently leads to serious errors of diagnosis. This profession either does not appreciate properly the value of the cystoscopic examination, or if they concede its value they hesitate to recommend it because it may be disagreeable to the patient. The cystoscope is as essential to an intelligent study of pyelitis and the other surgical lesions of the kidney as is a microscopic examina-

tion of the blood in suspected malaria or the x-ray in fractures.

For a long time medicine and surgery struggled along without the refinements which have given precision to diagnosis, and the diagnosis was nearly always a long distance behind the disease. The principal objections urged against the cystoscope in diagnosis are that the examination is painful and its use requires more technical knowledge and experience than any but a skilled operator possesses. In some cases a cystoscopic examination is very painful, while in many patients the pain amounts to nothing. If there is much pain there is frequently also considerable pathology, and therefore greater necessity for an examination which will give accurate information of the conditions present. In some renal diseases, such as tuberculosis, the bladder is very intolerant and a general anesthetic may be necessary. In pyelitis, on the other hand, there is only slight pain from the examination in most cases, unless the bladder has become very irritable from a secondary cystitis. The same contra-indications apply equally to the cystoscope in the diagnosis of pyelitis as prohibit the use of the urethral sound. If there is an acute inflammation of the lower urinary tract no instrumentation of any kind ought to be attempted.

We are not safe in promising our patients that a cystoscopic examination will cause no pain, for it may develop that it is both painful to the patient and very trying to the operator. There is no method of estimating a patient's perception of pain or disagreeable sensations, and the personal equation is a very important factor in these examinations. Even those patients who complain most of pain will frequently, after the examination is completed, say that the nervousness was worse than the pain. Morphine hypodermically combined with the local use of cocaine or alypin will usually be sufficient to prevent pain. A cystoscopic examination is safe, generally painless, especially in women, and furnishes accurate and important information in the diagnosis of pyelitis. In no other way can such information be obtained.

We cannot afford to place too much reliance on a diagnosis based upon the symptom groups combined with urinary findings in an infection of the genitourinary tract. They are too often misleading as to the location and nature of the trouble.

On cystoscopic examination the bladder in pyelitis may show a diffuse catarrhal inflammataion with changes more pronounced about the orifice of the ureter on the affected side. There is swelling and puffiness of the ureter opening and the urine comes away in a steady stream instead of the rhythmic spurts seen in normal conditions. A careful inspection of the bladder should be made and each ureter catheterized. We can thus eliminate obstruction of the ureter by a stone or by cicatricial contraction, and at the same time secure a specimen of urine from each kidney for examination. In acute cases the swelling of the ureteral mucosa, while in the chronic type contraction of scar tissue may diminish the caliber of the ureter and cause retention in the pelvis of the kidney. Pus, epithelium, casts, a few red blood cells and colon bacilli will be found in the urine from the diseased kidney. The specimen of urine so obtained should be examined carefully by the various tests for the presence of the tubercle bacillus. After ascertaining which kidney is infected further evidence is necessary to exclude pyelo-nephritis, which frequently results from chronic pyelitis. This differentiation is possible by the use of the functional test of kidney efficiency as proposed by Geraghty and Rountree. The kidney function is not impaired in pyelitis, while in pyelo-nephritis the damage to the parenchyma of the organ reduces its activity. No functional test for kidney elimination is perfectly satisfactory, and greater dependence must generally be placed on the clinical data in surgical conditions of the urinary tract. In estimating the relative working capacity of the kidneys, however, when one is suspected of disease, these tests are very valuable. The phthalein gives more accurate information and is simpler than any other in general use. With a catheter in each ureter the dye can be given subcutaneously, intramuscularly or intravenously. The latter method is to be preferred. After the catheters are placed in the ureters the urine is collected for fifteen to forty-five minutes and the percentage of elimination estimated by a colorimeter. In my experience with the phthalein test for the determination of the individual working capacity of the kidneys I have always injected the dye either subcutaneously or intramuscularly. The intravenous method, however, requires a shorter time for elimination and has given entire satisfaction.

In addition to the valuable evidence afforded by the examination of the urine from each kidney separately and important information derived from a functional test of the individual kidney efficiency, ureteral catheterization allows an approximate meas-

urement of the capacity of the renal pelvis. Chronic pyelitis sometimes causes marked changes in the outline and size of the pelvis of the kidney. To determine the capacity of the pelvis, sterile water is slowly injected through the ureteral catheter until pain is produced in the region of the kidney. The water is then allowed to return through the catheter and is measured. The variations in size and irregularity of outline of the renal pelvis may be further determined by the injection of a silver salt through the catheter, followed by an *x*-ray of the kidney. Apart from the use of the *x*-ray for the purpose of detecting a calculus which may be the underlying cause of pyelitis, radiographic diagnosis is a very important factor in determining the secondary changes due to long continued inflammation of the pelvis and upper ureter.

Thus all the elements of a diagnosis of pyelitis can be obtained by the use of the cystoscope combined with functional tests, *x*-ray and microscopic and chemical examination of the urine. By the use of these appliances and methods we may exclude appendicitis, ureteral stone, gall bladder disease, renal tuberculosis or pyelo-nephritis.

In the constitutional treatment of acute pyelitis the first indications are to relieve the pain, reduce the temperature, if high, and promote the elimination of toxic material. Urotropin is very popular as a urinary antiseptic. My experience with this drug in the treatment of pyelitis has been unsatisfactory. If valuable at all in pyelitis, it is so only in large doses given with an abundance of water to prevent irritation of the genitourinary tract. Recent investigation has done much to change our views in regard to the antiseptic value of this drug in inflammation of the renal pelvis.

Two grain pills of creosote, which are insoluble in the stomach, have been recommended in chronic pyelitis. In one case in which it was used it appeared to be beneficial. Creosote, like urotropin, may cause irritation of the kidney, and its administration should be watched. In an acute attack it is wise to delay local treatment of the kidney for a week or ten days unless the temperature remains persistently high. In such cases drainage is promoted by passing the ureteral catheter into the pelvis of the kidney and allowing it to remain for several hours.

In chronic pyelitis lavage of the renal pelvis with 25 per cent. argyrol is the most effective treatment. These injections should be given every three or four days, and the intervals gradually increased, but the injections continued as long as the urine contains pus. The highest number of injections required in any case in which I have used argyrol was seven. Three have proved sufficient in a few cases. All of these cases had either lasted some time and failed to improve or had recurred repeatedly under the usual dietetic, hygienic and medical treatment. Pelvis lavage is rarely accompanied by any pain or discomfort except that arising from the presence of a cystoscope in the bladder. In the pyelitis of pregnancy brilliant results are obtained by this method of treatment. The procedure is somewhat more difficult in pregnant cases, but can usually be accomplished. Surgical drainage of the kidney is rarely necessary in pyelitis and should be withheld until pelvic lavage is given a careful trial.

Vaccines have proved a valuable addition to the treatment of chronic pyelitis. The attractive manner in which these vaccines are marketed by the various biological factories and the extravagant claims made by the manufacturers have tended to make the use of vaccines more popular than scientific. Autogenous vaccines are, theoretically at least, the proper agents of the vaccine treatment. The use of autogenous vaccines stimulates the formation of precisely that type of antibodies best suited to combine with the toxic products of the infection. The lack of facilities for the isolation of the infecting agent in a given case, however, and the small number of biologic laboratories to which ready access may be obtained by the general practitioner, make it necessary frequently to employ the mixed or stock vaccine. The use of mixed vaccines is to be condemned except when it is impossible to procure a properly made autogenous variety.

A pyelitis frequently recurs because of some focus of infection elsewhere, such as diseased tonsils, chronic intestinal stasis, chronic cholecystitis and appendicitis. The appropriate treatment of the causative condition should always be undertaken.

420 West Grace Street.

Eczema:

Fellows claims that the following will give immediate relief and cure all forms of eczema:

Lac Sulphuris	℥ij
Zinci Oxidi	℥ij
Ichthyoli	℥ss
Mentholis	grn. xxx
Petrolati	℥iv

M. Sig.: Thoroughly rub in each night after washing with sulphur soap or some germicidal soap.—Charlotte Med. Jour.

Progress in Materia Medica and Therapeutics

VOMITING IN PREGNANCY

A. H. Curtis, of Chicago, reports a case of obstinate vomiting of pregnancy treated by means of injection of 15 Cc. of blood-serum drawn from a pregnant woman giving a negative Wassermann. It was defibrinated and injected into the muscular tissue of the back. Emesis continued but a larger proportion of food was retained. Five days later 10 Cc. of defibrinated blood from another pregnant woman with a negative Wassermann was injected and vomiting ceased completely in eighteen hours. Two subsequent injections were made within the next two days and treatment was then discontinued and the pregnancy progressed normally.—Jour. A. M. A., Feb. 28, 1914.

PILOCARPINE IN PARAPSORIASIS

K. Herxheimer and H. Kőster gave pilocarpine in a case of psoriasis to see whether the increased perspiration induced would relieve the troublesome itching. They found that the rash itself improved so much under this treatment that they regard it as curative as well as palliative. One patient was a servant, aged 39, whose skin had become scaly and had itched somewhat, particularly in warm weather, twelve years earlier. She had been treated in hospital ten years earlier, but the condition soon relapsed. Subsequently she had been repeatedly under medical treatment, without any permanent result. The organs of respiration, circulation, and digestion were healthy, and the urine contained neither albumin nor sugar. The rash, which affected the whole body with the exception of the face, the palms of the hands, and the soles of the feet, consisted of small papules, ranging from the size of a millet seed to that of a lentil. They were rust-colored, raised, more or less infiltrated, and almost invariably covered by scales, the removal of which caused no capillary hemorrhage. The distribution of the papules was irregular, and the skin between them looked somewhat dry. Dermographia was marked. Parapsoriasis *en gouttes* was diagnosed. Arsenic was given internally, and quartz light, chrysarobin, and liquor carbonis detergens were applied in different places. The quartz light provoked a dermatitis, followed by complete desquamation and formation of new skin, from which the parapsoriasis was absent. The chrysarobin and the liquor carbonis did not cure the rash. An intramuscular injection of 0.01 gm. of pilocarpine hydrochloride was followed in five minutes by violent perspiration and a flow of saliva. The injections were repeated at intervals of two to three days without general disturbances. After the sixth injection the rash had almost completely disappeared and the treatment was discontinued, as the patient could no longer stay in hospital. In another case a servant girl, aged 19, had recently developed parapsoriasis involving the whole body. Treatment was limited to eighteen injections of 0.01 Gm. each. After six weeks of this treatment there was scarcely a trace of the rash. How far these results are permanent remains to be seen. The authors are not certain as to the mode of action of pilocarpine in parapsoriasis. Their patients tolerated the drug well, but it is contraindicated in heart disease, congestion of the lungs, and pregnancy.—Berlin Klin. Woch., Dec. 1, 1913.

TREATMENT OF DIABETIC COMA

Three factors must be considered in treating diabetic coma, according to L. Blum: 1. The neutralization of acids in the tissues; 2. The excretion of acids; and 3. The stimulation of the circulatory organs. For the latter purpose, digitalis, caffeine, camphor and intravenous infusions with or without adrenaline are commonly employed, but these may all be ineffectual unless large amounts of sodium bicarbonate are introduced into the system at the same time. The same may be said of other diuretics. They are indicated but often fail unless there is sufficient neutralization. In the precomatose stage, alkalies alone with a starvation diet or a diet of milk and flour will often prove effective. The best way to give alkalies is by mouth and 5 to 10 Gm. of sodium carbonate may be administered every half hour in carbonated water or wine until the urine is alkaline. Sensitive individuals may take sodium citrate or effervescent sodium citrate instead. Where there is a tendency to vomiting the salt may be given in capsules which dissolve in the intestines; where diarrhea is present, equal amounts of calcium carbonate should be added. The rectal ad-

ministration is generally ineffectual. When an intravenous infusion is decided upon, the concentration should not exceed 6 per cent., and a second infusion should not be given unless an active diuresis has occurred. Active purgation is indicated, particularly in the precomatose stage. The amount of sodium bicarbonate administered should always be reduced after an alkaline reaction has been obtained since the long-continued use of large doses will invariably lead to gastric distress.—Berlin klin. Woch., Nov. 17, 1913.

TREATMENT OF PHTHIRIASIS OF THE SCALP

Broco and Jacquet write that in the treatment of pediculosis a 10 per cent. calomel ointment always gives good results. For twenty-four hours after the application of the ointment the scalp is kept covered with an impermeable dressing, except where there are large ulcerated areas.

The authors have also found of value the following solution applied on absorbent cotton:

Tinct. Benzoini	ɱl
Hydrarg. Chloridi Corros	grn. xv
Acidi Acetici Glacialis	℥j
Aquæ Colonensis	Oj

M. et ft. solutio.

—Jour de Mdé de Paris.

KERATIN IN CIRRHOSIS OF THE LIVER

Danilowsky was the first to use keratin in hepatic cirrhosis, and in 1905 made the first test in an advanced case of the cardiac type of the affection. Patient had been depending upon caffein and calomel and was becoming much worse. The keratin treatment was now continued for over a year, and the organ, at first enormously enlarged, became of normal size. Thus encouraged, the author tried the remedy on a case of Laennec's cirrhosis. The primary dosage was small—five half gram tablets daily—because of the accompanying gastro-enteric congestion. Bismuth was used as a corrigent and the dose of keratin slowly increased. Caffein was also used steadily, along with the *x*-rays over the liver. After five months of this treatment, during which three paracenteses were necessary, no more ascites formed and all edema disappeared, with simultaneous diuresis. The size of the liver and spleen remained unchanged; in other words, the disease was arrested in its course, but no actual involution had occurred. In a second case the results were even more striking. He improved more rapidly, and toward the last his treatment was ambulatory. The keratin was well tolerated by the intestine. As in the first case, the change wrought in the vessels of the liver had not become so marked as to affect the volume of the liver. In the third case there was not only an alcoholic, but a syphilitic history—nevertheless there was the usual degree of improvement: ascites, edema, enlarged abdominal veins all diminished greatly—in fact, became quite normal. There can, therefore, be no doubt that keratin is an antisclerotic remedy of much greater value than iodides. Of great weight is the fact that during the months of use no ill effects attributable to the drug were noted.—Berl. Klin. Woch., Feb. 23, 1914.

TREATMENT OF LICHEN PLANUS

R. L. Sutton, of Kansas City, Mo., describes certain variant forms of lichen planus which might escape recognition by the practitioner. He also includes in his consideration certain conditions heretofore included in the lichen group, but which have little clinical and no histologic resemblance to the typical form. Probably the most frequent of the aberrant types are those with circular patches of closely grouped more or less typical papules. Much rarer are the annular forms from gradual extension from single large papules. Two cases of the latter and one of an incomplete form of the same are reported. A form rather common in England but rare elsewhere is the linear type, the lichen planus striatus of Crocker, in which a narrow fillet of the eruption often follows the course of the sciatic nerve. A recently observed case of this is also described. Sutton thinks the most plausible explanation of this type is that it is due to scratching or other linear injury of the skin and not to nervous disturbance. The vesicular and bullous types of the disease are rare, but two cases are here reported by Sutton, as is also a case of a type followed by atrophy. Other atypical types illustrated by cases are the warty type, lichen planus hypertrophicus, lichen chronicus simplex (Vidal), which Sutton agrees with Brocq and Jacquet is a circumscribed pruritus with subsequent lichenification. It is one of the conditions mentioned as not being one of true lichen planus. The name prurigo nodularis has been given as a name for this condition and will probably be generally adopted. A case of lichen ruber moniliformis is also reported, which Sutton thinks is not allied to lichen planus but to prurigo nodularis.

In the treatment, besides the regular hygienic and nutritional measures, Sutton has found mercury, as originally recommended

by Liveing, greatly superior to arsenic. It is best given intramuscularly in the gluteal region and the soluble form rather than the insoluble form is preferred. In the hypertrophic form it may be alternated about once in two weeks with arsenic, or, better, with arsenic and iron. Alkaline diuretics are often beneficial, but he has found salicylates worse than useless on account of the gastric irritation. Cooling antipruritic ointments which are also more or less curative, and a soothing, non-greasy application which the patient may use at will, are advisable. For removing thick scaly patches, the Roentgen ray and carbon dioxide snow are useful. For exceedingly troublesome itching, Sutton recommends a formula of menthol, thymol, chloral and chloroform with the oils of eucalyptus and wintergreen in alcohol, applied three times daily. It is, he says, as hot as it is efficient, but he has found it useful in many cases of very troublesome itching. No efficient treatment for prurigo nodularis has yet been found, but Sutton thinks repeated freezing with carbon dioxide snow is probably the best plan.—Jour. A. M. A., Jan. 17, 1914.

FURTHER EXPERIENCE WITH IODIPIN INJECTIONS IN DISEASES OF THE EYE

W. Mylius confirms the slow and uniform splitting off of iodine from iodipin injected into the tissues and the complete absense of iodism. With the patient resting on the abdomen, the drug is injected between the middle and outer third of the gluteal region. Sites already used should be avoided. A 10 C.c. syringe with a sufficiently wide needle 8 cm. long is generally employed. The iodipin should first be warmed in a water-bath and the skin is then disinfected with tincture of iodine. The author has records of over 3,500 injections made in this way during the last few years. As a rule, each patient receives 10 to 12 injections, once or twice a week, according to the severity of the case. If necessary, other treatment such as mercurial inunctions, may be given at the same time. Indications for the use of iodipin are all affections where iodine is given internally, such as paralysis of the eye muscles, even if not of specific origin, parenchymatous keratitis, iritis and cyclitis, owing to general disease (syphilis, scrofulosis, metabolic affections), after cataract operations and sympathetic ophthalmia; chorio-retinitis exsudativa, hemorrhage into the retina, inflammation and atrophy of the optic nerve. The author believes that the subcutaneous injections of iodipin are indispensable for the general practitioner as well as the specialist. Pain during injection is to be ascribed to a faulty technique.—Woch. f. Therap. u. Hyg. d. Aug., No. 1, 1914.

INDICATIONS FOR CHINEONAL

I. W. Schtschukin has employed chineonal in 42 cases of headache and toothache, pains in the extremities and sleeplessness, and in 18 cases of pertussis and influenza. There never was any irritation of the intestinal or urinary tract even where there were catarrhal changes. Remarkable results were obtained in influenza with headaches, pains in the entire body and high temperature. After two to three doses these cases were cured, though other antineuralgics had failed. The effect in pertussis and influenza of children was also favorable. The severity and frequency of the attacks diminished even during the convulsive stage and irritative cough was rare during the night. The following doses were employed: Adults, morning and evening, 7½ grn., and at night 5 grn. Where there were severe pains the dose was increased to 10 grn. For children the daily dose varied between 5 and 12 grn, according to the age.—Therapewtitscheskoje Obosreinje, 1914, No. 1.

EPIDEMIC OF TRICHINOSIS

A small epidemic of ten cases of trichinosis in Italian immigrants is reported by J. M. Van Cott and W. Lintz, of Brooklyn, N. Y. It was caused by ingestion of insufficiently cooked pork obtained from two sources. Eight of the patients who consumed the pork from one source recovered. The two who used it from the other source died. The symptoms were characteristic; vomiting and purging, continuous fever, facial edema, especially of the eyelids, muscular pain, sensitiveness and rigidity, headache, loss of deep reflexes and Kernig sign. There was no splenic enlargement. The diazo reaction was positive and the trichina were found in the excised portions of muscle. There was also marked leukocytosis and eosinophilia, asthenia and profuse perspiration. In addition to the symptoms heretofore described, there was present one symptom in both the fatal cases throughout the disease, namely, marked pupillary dilatation. Four of the patients were children and suffered slightly less than the others, probably because they ate less of the meat. No parasites were discovered in the feces of any, and the authors agree with Fiedler that they are probably destroyed in the small intestine. One of the patients nursed

an infant until shortly before death, the child remaining well.

While the muscular symptoms are easily explainable, the cause of the nervous symptoms are yet debatable, and to determine the question they made a lumbar puncture on the last-mentioned patient and demonstrated the presence of the parasite in the cerebrospinal fluid. None were found in the blood, and as both tests were made the same day, it is presumable that the parasites came from the nerve-tissue rather than the blood. They ask: "May not the nervous symptoms be due, like the muscular symptoms, not only to the toxemia of the parasite, but also to the mechanical presence of the trichinae in the brain and cord?" The facts as to the trichinae in the circulating fluids of the body are discussed, and they think it possible that the parasites wander through the loose connective tissue of the body, besides being carried through the blood. The differential diagnosis had to exclude nephritis, typhoid fever, meningitis and muscular rheumatism but the final test must be the examination of an excised piece of muscle.

Other treatment being rather inefficient, salvarsan and neosalvarsan were tried, but without any marked benefit. The authors believe that trichinosis should be placed under the head of reportable diseases and government examination of pork advisable. Of course, the most efficient prophylaxis is thorough cooking, as Fiedler found that heating pork to 62 or 72 degrees destroyed the trichinae. They sum up their conclusions as follows: "1. Trichinae or embryos are not found in the feces, hence these cannot be used for diagnostic purposes nor are they a factor in the spread of the disease. 2. Intestinal antiseptics are futile in this disease. 3. Children either escape infection or when infected have the disease in a mild form because they eat only small amounts of the infected meat. 4. A child is not endangered by nursing from an infected mother. 5. For the first time living trichinae have been demonstrated in the cerebrospinal fluid *in vivo*. 6. In protracted and dubious cases of chronic muscular rheumatism it is advisable to examine a piece of muscle, microscopically, for trichinae. 7. Neither leukocytosis nor eosinophilia is an index of the severity of the disease. 8. The trichinae may wander into the tissues by boring through the fibrous connective tissues. 9. It is a mistake to rely for diagnostic purposes on the finding of trichinae in the blood, because such findings are rare. 10. A new and simple method of staining trichinae may be used. 11. Salvarsan is use less, as was shown in our cases. 12. Trichinosis should be made a reportable disease. 13. Governmental microscopic inspection of meat for domestic use should be instituted."—Jour. A. M. A., Feb. 28, 1914.

HEXAMETHYLENAMINE IN HEMATURIA OF TYPHOID

J. Belkowski, in forty cases of typhoid give hexamethylenamine in does of 7½ to 10 grains three or four times a day. In four cases hematuria appeared and in one patient death followed. At autopsy the bladder was found to be the seat of marked desquamation and bloody ecchymoses and the intestines of numerous ulcers, one of which had yielded, the peritoneum exhibiting a grayish exudate. Neither perforation, intestinal hemorrhage, or relapse occurred in any of the remaining patients of the city. The author does not believe that hexamethylenamine can be considered a specific in typhoid but he believes that in view of the favorable results be obtained with it that it deserves a more extended trial.—Revue de Médecine, Aug., 1913.

BLOOD TRANSFUSION

E. Lindemann, of New York, gives an analysis of 135 transfusions made by the syringe cannula method in a large number of diseases, anemia, hemophylia, hemorrhages from various causes, etc. The ages of the patients ranged from six months to between seventy and eighty years. There were 243 cannula insertions in the veins, and the largest amount transfused at one sitting was 2,000 C.c. from two donors. The largest quantity from one person at one sitting was 1,260 C.c., and there were numerous donors who gave from 900 to 1,000 C.c. The recuperative power of a healthy donor is remarkable. While reaction from a blood-transfusion from a near relative is generally least, in many cases alien blood is equally congenial. As regards blood-tests before transfusion, Lindemann's view has always been that unless the serologic report is respected it is useless to perform the test. In the large number of donors tested a certain number of incompatibilities were discovered and eliminated. Laboratory work, unless well done, is worthless, and it has its limitations in any case. Only once, however, in this series did the laboratory fail. One case is reported and a number of tables are given in the article. Lindemann says: "Not only is blood-transfusion a matter requiring

skill, but problems in pathology, physiology, serology, immunity, chemistry and clinical medicine also constantly arise that require special study. Every large hospital in which such work is done should have on the attending staff a hematologist who can give to such work the degree of specialization necessary to meet the many problems and direct the work. A waste of good blood may be prevented and applications seen that might otherwise be overlooked." —Jour. A. M. A., March 28, 1914.

INFLUENCE OF DRUGS ON PHAGOCYTOSIS

Arkin writes that there are three essential factors concerned in bacterial phagocytosis on which chemical substances may act so as to increase or depress phagocytic activity, namely, 1, the leucocytes; 2, the opsonins, and 3, the bacteria. The effects of a variety of substances on phagocytosis have been studied by him, and a brief statement of results is made. From his own and other experiments he concludes that alcohol, chloroform, ether, choral, morphine and potassium cyanide depress phagocytosis in vitro. These substances all have an inhibitory effect on oxidation to which their action on phagocytosis is in all probability due. Strychnine has a marked stimulating action on the phagocytosis of streptococci by human leucocytes in the presence of human serum. This action offers an explanation of the value of this drug in infections, and suggests a more extended use of it. Caffeine, in weak solutions, one-tenth per cent., has practically no effect, but stronger solutions inhibit phagocytosis. Antipyrine has no effect, cholesterol has little effect, while lactic acid suspends hemolysis and phagocytosis by acting on the complement and the opsonin.—Journal of Infectious Diseases, November, 1913.

SEDATIVE ACTION OF DIOGENAL IN PSYCHOSES AND NEUROSES

Diogenal, a new sedative closely allied to veronal, has been used for one and a half years by F. Mörchen in chronic psychoses with more or less marked excitation and restlessness. The drug was usually given for 3 to 14 days in doses of 7½ to 22 grn. three to four times a day. A hypnotic effect was seen only after 30 grn., a dose seldom given, but never followed by any after-effects. The cases treated included dementia precox, hallucinatory excitement, paranoia, congenital dementia, katatonia, etc. No other drug free from after-effects showed such pronounced and protracted sedative action with so little hypnotic effect. The internal tension, irritability, negativism and aggressiveness of these patients diminished in degree and a pleasant subjective sensation usually resulted. An excellent sedative effect was also obtained in a maniac-depressive female during the maniac stage. The drug is also useful for the abnormal sensations of neurasthenia and during the withdrawal from morphine, opium and alcohol. The disagreeable restlessness and precordial fear did not appear. There were no disagreeable after-effects, no skin eruptions and no change of pulse, blood-pressure or urinary secretion.—Psych. Neurolog. Woch., 1914, No. 50.

NEOSALVARSAN

B. B. Beeson, of Chicago, gives a summary of his observations of the use of salvarsan in the Paris hospitals, where the method has been considerably developed. He has had opportunity to observe and follow a number of cases in Ravaut's service in the Hôpital St. Louis, and in that of Levy Bing, at Maison St. Lazare in Paris, where it had been employed in a concentrated solution in distilled water. Ravaut gives neosalvarsan up to 0.9 Gm. doses in 10 C.c. of fresh water and says that this amount of water may be still further reduced. The intravenous route is preferred but the intramuscular method is sometimes employed. The injection is sometimes followed by elevation of temperature beginning six or eight hours afterward, as does also the more frequently occurring headache. If this occurs repeatedly after the first injection, the patient's nervous system should be looked after. Other sequelæ sometimes observed are nausea and vomiting (sometimes appearing immediately), a mild serous diarrhea and various cutaneous manifestations which are not so frequent and are not mentioned as of special importance. There is a tendency among the French to reduce the number of contra-indications to the use of salvarsan. The following are the chief ones: nephritis, myocarditis, chronic alcoholism, acute respiratory disturbances and gastric or duodenal ulcer. Some advise the use of neosalvarsan in luetic nephritis. The general opinion is that tabes and paresis should be treated with neosalvarsan and in the incipient stages large doses can be used. The paper is summarized as follows: "1. The initial dose of neosalvarsan in most cases should not exceed 0.45 Gm. 2. At least seven days should elapse before a second injection is given. 3. If following several injections signs of intolerance are noted,

the dose should be kept at the same figure, and reduced if the symptoms do not disappear following further treatment. 4. Distilled water is the best solvent. 5. Administration in concentrated solution seems to be the superior method. 6. Distillation should be performed in an apparatus composed wholly of glass. 7. The intravenous method is the one of choice. 8. Continued headache should be regarded as indicating possible involvement of the nervous system. 9. Neosalvarsan has a most efficient ally in mecury."—Jour. A. M. A., Feb. 14, 1914.

ETIOLOGY AND TREATMENT OF AMENORRHEA

The most common causes of amenorrhea besides pregnancy and the climacteric are hereditary influences or general diseases. Etiological treatment is here indicated, but results cannot be promised. In another group, the purely idiopathic amenorrhea without pathological changes, the drug eumenol was used by S. Kohn. The menses appeared in 25 per cent. of the cases, though they did not always recur punctually, and the drug had to be repeated. The colicky pains were controlled with pyramidon, 0.3 to 0.5 Gm. The dose is 15 to 25 drops of the liquid preparation three times daily, or 3 to 6 pastilles daily. There were no gastrointestinal disturbances observed.—Therap. Monatsberichte, 1914, No. 1.

TREATMENT OF GALLSTONE COLIC

J. F. Dunn, of Chester, Pa., writes that the acute pain demands absolute and complete rest in bed, then sure and immediate relief from suffering, and nothing acts with greater surety than morphine or some other form of opium. In strong individuals, where the pain is intense, we can give a hypodermic injection of morphine sulphate, beginning with grain one-quarter to one-half, increasing with caution to prevent poisoning. In less strong individuals, or where the pain is not severe, it is best to begin with one-sixth grain, repeating in twenty minutes, giving a third dose in an hour, if necessary, the physician remaining at the bedside to note the effect of the morphine. Inhalations of chloroform may be used until the morphine has had time to act. If for any reason morphine cannot be used then paregoric or laudanum may be substituted. The stomach may be unretentive, then chloral combined with tincture of opium may be used by rectal injection. Hot applications over the gall-bladder generally give marked relief and may be used in the form of turpentine stupes, mustard plaster, hot towels or flannels; at times a hot full bath gives marked relief. In using mustard or turpentine, care must be exercised to prevent burning the patient, the hot applications being continued until the tenderness in the gall-bladder region has subsided. If there is any sign of collapse, stimulants are indicated, such as camphor, strychnine and strong black coffee answering very well. Vomiting can usually be controlled by small bits of ice, cocaine, opium or bromides, but this condition rarely demands active treatment, as it subsides with cessation of the pain. When the severe pain has lessened the following gives excellent results:

Tincturæ Opii Camphoratæ	℥j
Tincturæ Zingiberis	℥iij
Spiritus Chloroformi	℥ij
Mucilaginis Acaciæ	℥ss
Aquæ	ad ℥iv

M. fiat mistura. To be given in dram doses every two hours until pain subsides.

The patient remains in bed until all signs of inflammatory conditions have subsided, and for the first eighteen to twenty-four hours it is best to prohibit food in any form. Milk and water in small amounts may be given; purgation by mouth is forbidden. After twenty-four hours a simple enema may be used to open the bowels, and light soups may be allowed, to be followed later on by milk toast, gruels and the more easily digested vegetables; then a laxative may be given, such as rhubarb or Carlsbad salts. In a few days the diet list may be cautiously increased; spices, condiments, greasy foods, alcoholic drinks and foods that undergo fermentative changes should be denied. If any signs of inflammation still exist the patient remains in bed. With a subsidence of the inflammatory condition, calomel, grain one-tenth every hour for ten doses, followed by a saline in the morning, may be used, and colonic irrigation results in marked benefit. When the attack is completely over the value of sanatorium treatment may crop up; its chief virtue probably lies in the rest, regular diet and freedom from the cares and worry of business.

The after treatment resolves itself into diet regulation, rest, local measures and the use of drugs. Regarding diet, the patient's peculiarities must be taken into consideration. Violent exercise of any kind is prohibited, and rest tends to restore the patient to his former condition. As long as there is any sign of inflammation, local treatment must be continued until all physical signs have gone.

Sodium sulphate or sodium phosphate may be given two or three times daily; the

bile salts, oxgall, and the mildest cholagogues enjoy some reputation.

The question may arise at any time as to when a gallstone case ceases to be a medical one and should be turned over to the surgeon. Considerable discussion has taken place over this phase of treatment, and each side has its advocates. A large majority tend to a gradual cure, the acute symptoms disappear never to return. As a general rule, medical treatment is further indicated when a patient remains in good condition, free from pain and fever, where there is no sign of extending inflammation or loss of weight, or where surgical interference is dangerous because of serious complications on the part of other organs. Surgical treatment is indicated if palliative treatment has failed, and dyspeptic conditions continue, where the attacks are frequent enough to make the patient's life miserable or interfere with his work, or where there is any indication of a purulent cholecystitis or localized abscess. It is also indicated in gangrene or perforation of the gallbladder, chronic obstruction of the common duct, with chills, fever, associated jaundice and enlargement of the liver.—N. Y. Med. Jour., April 4, 1914.

QUININE IN AMEBIC DYSENTERY

Major Roger Brooke, Medical Corps, U. S. A., San Francisco, says that the incomplete success obtained with emetin in some cases and his occasional inability to obtain it led him to try the action of quinine in amebic dysentery. From its action given hypodermatically he concluded that its action was general and not local, and its less intense amebacidal action would allow it to be given in much larger doses. A third point is that cases which resist ipecac may develop an emetin-fast strain of parasites that might succumb to quinine, and vice versa. He therefore began to use quinine sulphate in doses of from 22 to 30 grains per day with most gratifying results. The following are his conclusions: "1. In the early stages of entamebic dysentery, ipecac, or preferably its alkaloid, emetin, given hypodermatically, would appear to have a specific action on the disease. 2. In chronic cases, ipecac is a valuable remedy and will cure many patients, but not with the promptness and certainty that it does in the acute phases of the disease. 3. Quinine sulphate by mouth in doses of 2 Gm. per day would appear to be as efficient as ipecac in the treatment of entamebic dysentery. 4. Quinine is always available, is much cheaper than emetin, and, in most cases, can be given with less discomfort to the patient than ipecac or its active principle." —Jour. A. M. A., March 28, 1914.

ISOTONIC SOLUTIONS IN THE LOCAL TREATMENT OF GONORRHEA

Saint-Martin and Uteau, in the "Presse Médicale" for August 23, 1913, per "N. Y. Med. Jour.," write that intraurethral injection of isotonic medicinal fluids, that is, fluids prepared by dissolving the antiseptic agent to be used in 0.75 per cent. saline solution, is better borne and generally occasions much less pain than where pure water alone is employed. Potassium permanganate, mercury oxycyanide and the organic and colloidal silver preparations should all preferably be used in isotonic solution. No chemical change results from their dissolution with the sodium chloride, except in the case of the mercury salt, which, especially when the mixed solution is boiled, may set free minute amounts of mercury oxychloride, mercury bichloride and sodium cyanide. In a large number of urethral and vesical irrigations or instillations made with isotonic solutions by the authors, better therapeutic results seemingly were obtained than with the ordinary procedure. Especially in early acute urethritis there was a marked difference, large irrigations with permanganate and colloidal silver causing no discomfort and proving more promptly curative. Instillations of silver albuminate, even one in forty strength, were found quite painless when normal saline solution was used as solvent.

PERHYDROL FOR DISINFECTION OF INSTRUMENTS

During the comparative analysis of various preparations of hydrogen peroxide W. Eichholz found that pure solutions not only do not corrode iron, but actually preserve it. Iron nails will rust in water in a few minutes, but remain unchanged for ten days in diluted Perhydrol, and rusted only when all the peroxide was decomposed. The same was found to be the case with other metals and only impure solutions gradually destroyed them. The behavior of peroxide toward iron and copper is so characteristic that it may be used as a criterion for the purity of the solution. Perhydrol was found to be the purest preparation, and among the solid preparations Perhydit gave the best results, since it only attacked silver. Sterilization of metallic articles with pure 3 per cent. solution of hydrogen peroxide is recommended where heat cannot be employed.—(Mediz. Klinik., 1913, No. 51.)

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APRIL, 1914

EDITOR'S NOTES

Papaverine in the Röntgen Diagnosis of Gastric Diseases

Papaverine, one of the alkaloids of opium, has a pronounced effect in reducing the tonus of smooth muscle fibres and is, therefore invaluable as an aid to Röntgen diagnosis in determining if an atonic condition of the stomach is due to pylorospasm or to organic obstruction at the pylorus S. Szerb and V. Revesz (Klin.-therap. Woch., March 2, 1914), proceed as follows: An exposure is made after the patient has taken a barium sulphate suspension then, after one day's rest, the patient received 0.05 Gm. papaverine hydrochloride by mouth, and a second exposure is made one hour later.

Three groups of cases may be recognized: 1. Under the influence of the alkaloid, the delay in the emptying of the stomach is corrected, that is, the stomach again empties itself in the normal time. The subsequent history and treatment of these cases showed that the disturbance depended upon a pylorospasm. 2. The stomach empties itself more slowly under the influence of papaverine than before. In each case an actual pyloris stenosis was found as lesion. 3. Papaverine had no influence on the passage of the barium meal. In one case a stenosis of the pylorus plus plyorospasm was found; in a second there was an infiltration with ulceration at the lesser curvature of the stomach. By means of papaverine it is also possible to determine the spastic nature of an hour-glass stomach. The exposure should always be made three and one-half hours after a bismuth meal and three hours after a barium meal. In one case pylorospasm was detected in combination with achylia gastrica. The authors always employed the papaverine without the addition of atropine.

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A New Drug for Malaria

Comparative investigations many years ago showed that most of the alkaloids contained in cinchona bark reduce fever and destroy the malarial organism. Omitting quinine, the strongest effect was obtained with quinidine, the weakest with cinchonine. In all these studies one of the rarer alkaloids, cupreine, occurring only in some forms of cinchona, was overlooked.

Though quinine is regarded as a specific for malaria, it frequently has but little effect on certain tropical forms of the disease, so that the search for a new remedy seems justified. Other drugs, such as methylene blue, the arsenic compounds and the various derivatives of quinine such as euquinine, aristochin, etc., were not found to be superior to quinine in the more severe types of the disease.

A study of the chemical constitution of the cinchona alkaloids shows that they are all closely related to each other. Thus quinine may be regarded as a methoxycinchonin, cuprein a hydroxylcinchonin. They all contain a vinyl group which is inactive and which can be replaced by an ethyl group, with the result that the parasiticide properties of the drug are considerably increased. Morgenroth and others have made a large number of experiments and have finally succeeded in synthetizing a substance, ethylhydrocupreine, which proved far more potent in infections with trypanosoma and pneumococcus than quinine itself.

The new substance was carefully tested in the malarial infections of man by G. Izar and R. Nicosia (Bul. klin. Woch., March 2 and 9, 1914). In 49 cases, quoted in detail ethylhydrocupreine (optochin) showed a decided effect not only in the simple tertian and quartan forms, but also in the aestivoautumnal types, usually so resistant toward the action of quinine, no matter in which way it is introduced into the system. It is well known that the antiparasitic action of quinine is directed only against certain stages in the development of the plasmodium. Thus, the

parasites of aestivoautumnal fever are not influenced by quinine in the fully developed, pigmented stage and during the sporulation, but are usually checked in their further development in their early, non-pigmented stage. Ethylhydrocupreine on the other hand, also affects those stages which are resistant toward quinine. Many of the cases reported were treated for some time ineffectually with quinine and improvement only set in when the second drug was substituted. In cases influenced by quinine, the cupreine compound is also superior, since the parasites disappear more quickly from the blood. Thus, in simple forms of tertian and quartan fever no parasites could be found eight or ten hours after 22 grains ethylhydrocupreine was given. With simple aestivoautumnal tertian fever the time was 10 to 16 hours while in the quotidian type a second dose must be given on the following day. The parasites of the aestivoautumnal subcontinuous fever proved more resistant, but always disappeared from the blood after a treatment lasting four days. though in many cases a single dose was sufficient. It is well known that the parasites are still present in the circulating blood 48 hours after an intravenous injection of quinine.

Clinically, there always is a prompt fall of temperature with subjective improvement. Even in the severest types of malaria the patients feel much better on the second day of treatment. The anemia and splenic tumor disappear rapidly, the color of the patients improves and the appetite returns. Another important fact is that there have been no recurrences in any of the cases treated with the new drug. Even after large doses of quinine recurrences are only too common in the severer types of the infection. The patients treated all came from a badly infected region in Italy, and presented some of the most obstinate forms of the disease.

The dose usually employed was 15 to 22 grn. daily for adults. It is best to give this amount in three powders, with intervals of four hours. The duration of the treatment was one to five days, sometimes with an intermission of one day. In no case was it necessary to repeat the treatment.

After-effects observed are those seen with quinine (deafness, tinnitus, somnolency) and darkening of the visual field up to total amaurosis. The latter is very rare and not permanent, and virtually never occurs with the doses mentioned above.

Good results were also obtained with the new drug in Kala-azar and Malta fever.

TREATMENT OF SYPHILITIC AORTITIS

I. W. Held, of New York, writes that Ehrlich cautioned against the use of salvarsan in cardiac and vascular diseases. Grossman, who was the first to try salvarsan in luetic aortitis, advised that only small doses should be used, 0.2 to 0.3 Gm. twice weekly until four doses had been given. While of late it has been customary to inject salvarsan intravenously in the office, letting the patient walk home, in cardiac and vascular diseases the patient should stay in the hospital at least from twenty-four to thirty-six hours; and where there is aneurysm, or marked myocardial involvement, should be kept in the hospital two weeks, through the usual course of treatment. Whenever the heart is diseased rest is a great factor. The author regards some of the cases of sudden death following the use of salvarsan as being due to the fact that the patient had done unusual physical work soon after the injection.

At the end of the course of salvarsan treatment, mercury salicylate in doses of one-third to one-half grn. intramuscularly should be given once or twice weekly or inunctions of blue ointment in doses of one dram thoroughly rubbed in every night until thirty inunctions are used. Saturated solution of potassum iodide, 15 drops three times daily, should also be given. A form of mercury that has recently been recommended by Hirsch in the oxycyanide given intramuscularly in combination with acoin. It is said to be painless, readily absorbed and particularly indicated when tabes dorsales complicates the disease.

Where the pain is marked and not relieved by this specific treatment, codeine may be used, or, according to I. Adler, dionin in doses of one-quarter to one-half grain once or twice daily. As in the beginning. insomnia is a great factor, a hypnotic like veronal, 10 grn. in the form of a suppository or in a cup of hot milk is to be given. Another drug that is dependable, especially when the blood pressure is high. is diuretin, 7½ grn. t. i. d. If the pressure is not high, it is usually combined, according to R. Fränkel, with 1 grn. caffeine citrated.

When the kidneys are involved, it should be our aim to determine by our functional tests the form of the affection and arrange treatment accordingly. If it is true that the uremic type—the vascular type—predominates, the indications are toward a great restriction of nitrogenous food substances.—Med. Record, Dec. 20, 1913.

Book Notes

A Practical Treatise on the Causes, Symptoms and Treatment of Sexual Impotence and Other Sexual Disorders in Men and Women. By William J. Robinson, M. D.—In his preface to the work Dr. Robinson states that he has striven to present his subject in a style that was personal, clear, straightforward and conversational. He has succeeded in this; in fact, that is Dr. Robinson's regular style, and had the work appeared in any other style we might have doubted that he had written it himself. The subject matter is divided into nine sections, with the following headings: Masturbation, Pollutions and Spermatorrhea, Sexual Impotence in the Male, Sexual Neurasthenia, Sterility, Sexual Disorders in Women, Priapism, Miscellaneous Topics and prescriptions. While the author holds some views upon which authorities are by no means agreed, as, for example, on the question of continence, yet the work may be read with great profit by every practitioner. It has always seemed strange to us that, in view of the great prevalence of these disorders of the generative apparatus, that there has been such a paucity of literature. The value of the present work is greatly enhanced by the numerous case reports and by the very practical therapeutic suggestions and prescriptions. (The Critic and Guide Co., 12 Mt. Morris Park West, New York. Price, cloth, $3.00 post paid. 1913. pp. 420.)

Beiträge zur Klinik der Infektionskrankheiten und Immunitätsforschung. Herausgegeben von Prof. Dr. L. Brauer. II Band 2. Heft.—This number contains the following articles: C. Levi, "Abortive Scarlatina During the First Few Months of Life;" Dr. P. Aaser, "Meningococcus Serum;" Dr. L. Detre, "Theory and Practice of Vaccinetherapy;" Dr. Orlovius, "The Influence of Salvarsan and Neosalvarsan in Infectious Diseases, Especially in Puerperal Fever;" Dr. Döllner, "Puerperal Infection from the Medico-Legal Viewpoint;" Prof. Dr. G. Herxheimer, "Lymphogranulomato is from an Etiological Standpoint;" Dr. O. Porges, "Serodiagnosis of Syphilis by the Precipitation Method." (Curt Kabitzsch Verlag in Würzburg, Germany. Price, M. 6. 1914.)

The Pathogenesis of Salvarsan Fatalities. By Sanitäts-Rat Dr. Wilhelm Wechselmann. Authorized translation by Clarence Martin, M. D., St. Louis, Mo.—Just what rôle salvarsan and its companion preparation, neosalvarsan, are to play in the future therapeutics of syphilis; whether they are to remain the principal form of treatment of this disease and whether they possess sufficient spirillocidal power to warrant their unaided employment are points of the very greatest importance, and in the belief that the work of Wechselmann throws the greatest light on that subject, the author presents this translation of Wechselmann's work. The cases of fatalities following the use of salvarsan are reported and commented on at length, and the following cautions are advanced: 1. The most exact technique; 2, a dose of the drug carefully adapted to the individual case; 3, careful observation of the urinary secretion when employing salvarsan; resorting to the most exact chemical and microscopical examination of the urine. This holds good particularly when the combined treatment is employed; 4, the conjoint use of salvarsan with heavy mercurial treatment is dangerous! If one will use the combined treatment, then give the mercury very carefully many days after the last salvarsan injection, but never reverse this rule! 5, take into careful consideration every general reaction or rise of temperature following the use of salvarsan, and make a full investigation of the causes of such effect. (The Fleming-Smith Co., St. Louis, Mo., pp. 143. Price $1.50 net. 1913.)

Geschichte der Nasenheilkunde von ihren Anfängen bis Zum. 18 Jahrhundert. von Dr. Med. Karl Kassel. I Band.—Rhinologists, and those physicians as well who take an interest in the history of their chosen profession, will find in this scholarly work of Dr. Kassel much that will interest them. The volume represents a great work well done. The work has been a great one, for in bringing together the mass of material the author has searched not only through the records of the Middle Ages, but has delved deeply into those of ancient Babylonia, Egypt, Greece and Rome. We call attention to this work, for at the present time many of us are inclined to attach a little too much importance to the so-called "practical," forgetting the while the greater and the more broadening influence of the seeming less "practical." It is just this attitude that has made unprofitable the publication of works of this character in the past, and has discouraged both the men who have the ability to write them and the publishers from taking up the work. By the publication of this volume medical literature is the richer and the medical profession is to that extent at least in debt to the author. (Curt. Kabitsch Verlag in Würzburg, Germany. Price M. 10, bound M. 12. 1914.)

Introduction a la Médicine des Passions, par le Dr. M. Boigey, médecin-major de l'armée. In this work, written in simple and clear French, without excessive use of technical terms and complicated classifications, the author discusses the causes, the symptoms and the treatment of the passions. He treats them as moral diseases whose evolution is closely and directly connected with the physical activities of the subject and with heredity. This conception is, of course, quite at variance with those purely speculative ideas of the earlier moralists. The complexity of modern life has wrought many changes in our mental and moral equilibrium, and we are almost daily subjected to shocks of one sort or another that inevitably leave their marks upon our psychic make-up. It is quite natural, therefore, that lately so much attention should be directed to psychotherapy. So, too, the many and diverse methods that have been devised whereby we are able to detect and measure with such precision these psychic states, has resulted in a great advance in our knowledge of the causes, and of what is of even greater importance, our ability to correct and adjust these relations. (1 vol. in —16. Price 3fr. 50. Librairie Félix Alcan, Paris. 1914.)

L'Hystérie et son Traitement, par le Dr. Paul Sollier, Ancien Interne des Hopitaux de Paris et des Hospices de Bicêtre et la Salpêtrière. Deuxieme édition, revue.—This work may be considered the complement of the theoretic and experimental work of the author, published some time ago under the title "Genesis and Nature

of Hysteria." As the title indicates, it is devoted to the treatment of hysteria, though the author has found it necessary to introduce here and there a little of the theoretic in order to make more clear his other discussions. As the treatment advocated by the author is based upon the pathogenesis of the condition, he opens the work with a discussion of that subject and propounds not only his own theory, but explains clearly the principal theories now in vogue. The subject matter is exceptionally well arranged; in fact, the index of contents is almost superfluous. (1 vol. in —16 de la "Collection medicale" cartonné à l'anglais. Price 4fr. Librairie Felix Alcan, Paris. 1914.)

Les Limites du Vol Morbide, par P. Jaquelier, médecin en chef des Asiles de la Seine, et J. Vinchon, interne de la clinique des maladies mentales et de l'encéphale. Preface du Dr. A. Vigouroux.—In this volume is presented a most interesting psychological and sociological study of kleptomania. The authors have made an exhaustive study of the causes and motives of those afflicted with this mania, and they point out to what extent it may be held in check. They are rather sceptical in regard to kleptomania, and suspect that "criminal experts" have hitherto concerned themselves too much with the mental states of the criminal rather than with the extent to which they may be checked or repressed. Their conclusions conform with those presented by Dubuisson and Vigouroux in their work, "Responsabilité pénale et Folie." I vol. in —16. Price 3 fr. 50. Librairie Felix Ancan, Paris.

Pamphlets Received

Technique of the Intra-Abdominal Administration of Oxygen. By William S. Bainbridge, Sc. D., M. D. Reprint from American Journal of Surgery. Oct., 1913.

In Memoriam. Dr. Frank Hopkins Boynton, Director and Surgeon in the New York Ophthalmic Hospital.

The Surgical Treatment of Cancer. By William S. Bainbridge, A. M., Sc. D., M. D. Reprinted from the International Journal of Surgery, May, 1913.

Annual Report New York Ophthalmic Hospital for the year ending Sept. 30, 1913.

Intravenous Anesthesia. By William F. Honan, M. D., and J. W. Hassler, of New York. Reprinted from Annals of Surgery, December, 1913.

Die Zuckerkrankheit (Diabetes Mellitus) Ihre Ursachen, Wesen und Bekämpfung Gemeinverständlich dargestellt von Dr. med. A. Sopp. 2 verbesserte u erweiterte Auflage Curt Kabitzsch, Würzburg. Price M. 1.80.

Würzburger Abhandlungen aus dem Gesamtgebiet der praktischen Medizin x iv Band. 5 Heft. Der Blitzschlag. Curt Kabitzsch, Würzburg. Price M. 85.

Riedel Archiv. J. D. Riedel, A.-G. Berlin.

Würzburger Abhandlungen aus dem Gesamtgebeit der praktischen Medizin. XIII Band, 6 Heft. Die Diagnose und Behandlung des Magenkrebs vom Standpunkt des Internisten von Dr. Lipkowski. Mit 1 Röntgenbild im Text und 4 auf Tafel 1. A Stuber's Verlag, Würzburg. Price, Mk. .85.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Hemolysis from Distilled Water Injection.—A. B. Krumbhaar, of Philadelphia, observed in the performance by a physician of a clinical test on himself calling for intravenous injection of distilled water before applying it to patients, that sufficient hemolysis was caused to produce chills, fever, considerable malaise, albuminuria, and hemoglobinuria lasting about four hours. It was afterward estimated that the individual weighed 84 kg., and as between 300 and 400 C.c. of water were injected in about fifteen minutes, in addition to the relatively isotonic drug solution used, the amount of water introduced was about 0.4 per cent. of the body-weight. As a search in the literature did not give definite statements as to the amount of distilled water that could be thus given without inducing hemolysis, he determined to experimentally investigate the matter. It has been known since the time of Johannes Miller that intravenous injection of water might cause hemolysis, but that this was avoided if a certain proportion of salt was added. The experiments of the author were performed on dogs. The following is a summary of the results: "1. Rapid intravenous injection of distilled water, in amounts equal to from 2 to 3 per cent. of the body-weight or more, will cause in the dog transient hemoglobinuria and albuminuria. 2. Lengthening the duration of injection time from five to forty-five minutes is without noticeable effect, though a much slower injection might give different results. 3. Hemoglobin-stained urine usually appears in the bladder catheter in from twenty-five to thirty minutes after the beginning of the injection. The hemoglobinuria lasts from four to sixteen hours, depending on the severity of hemolysis. 4. Much smaller amounts (as low as from 0.4 to 0.6 per cent.) are sufficient to cause a noticeable hemoglobinemia without hemoglobinuria. 5. Hemoglobinemia appears within from two or four minutes after the beginning of the injection and may last twenty-four hours. 6. In doses that just fail to cause hemoglobinuria, albumin and bile may appear in the urine the next day. 7. No noticeable anemia is caused, but there is a temporary decrease in the minimal resistance of the red blood-cells." The tabulated results of the experiments are given.—Jour. A. M. A., March 28, 1914.

Formaldehyde.—Hugh McGuigan, of Chicago, has studied the migration, fate and changes of formaldehyde in the body. He reviews the former literature of the subject and the claims of beneficial action of formaldehyde vapor inhalation as made by some authorities. He publishes protocols of his experiments showing that it is rapidly absorbed from the lungs and the gastro-intestinal tract, and that formic acid is easily produced in the body from formaldehyde. Small doses disappear rapidly from the blood. When injected intravenously it causes a fall in pressure corresponding to the amount received, and its disappearance from the blood seems to occur *paripassu* with the rise of pressure to the normal. The short retention of formaldehyde in the blood partly explains this failure to benefit cases of sepsis and tuberculosis. Any reported benefit following intravenous injection must be

attributed, as commonly accepted, to the saline given with it. After absorption there is a slight, temporary stimulation of respiration and a cardiac depression which soon return to normal. After large doses and to some extent after small ones, it causes edema, and only after large doses do we find anything like the marked inflammatory changes recorded by Fischer. As expected, we find formaldehyde in the body in the same places as we find hexamethylenamine, but not so widely distributed. It is excreted mainly in the urine, gastro-intestinal tract and by the lungs. Bayer's theory that the formation of sugar in plants is due to a condensation of formaldehyde into dextrose is not credited by the author. He finds no facts in favor of its internal use and no special affinity for bacteria. Within the body the evidence favors the opinion that it preferably unites with dead material or inorganic bodies. It neither exercises any selective action on invading organisms nor stimulates protective mechanisms, so far as has been shown. Recovery from inflammatory reactions may be apparently complete. It causes a stimulation of the intestinal movements, with large doses extreme. He concludes that the antiseptic action of formaldehyde is apparently due to fatigue, exhaustion, and a final firm combination with the drug, and there is nothing to indicate its usefulness in medicine other than for local use.—Jour. A. M. A., March 28, 1914.

Diagnosis of Whooping-Cough.—A. Friedlander and E. A. Wagner, of Cincinnati, find that the complement-deviation test is of the very greatest value in the diagnosis of whooping-cough, though Bordet himself, who described the bacillus, concluded that the complement-fixation was not only an early sign. Their technic for the test is described as follows: "A small amount of blood was taken from the patient's ear, finger or toe in small test-tubes or the Wright capillary tubes. This was kept at room temperature or placed in the incubator until coagulation had taken place. Serum was then separated more completely from the clot in the centrifuge. So far in our tests only the fresh active serum has been used. Two drops of the serum were used in each test. Hemolytic System: The Noguchi system was used, because of its extreme delicacy and because of the small amounts of material, especially serum, required. Antigen: This is the most important factor in the test. The Bordet-Gengou bacillus was obtained in pure culture from the laboratories of Parke, Davis & Co. Most of the work was carried on with this culture. Cultures were also obtained from the H. K. Mulford Company and Dr. F. B. Mallory, of Boston. The latter culture came from a strain grown at Theobald Smith's laboratory. Subcultures were made on Bordet's medium, ascitic fluid agar and broth serum. The antigen was made from seventy two-hour growths in ascitic fluid agar in the following manner: The colonies, which are very tenacious, were washed off the agar with sterile salt water. An emulsion was made, and the bacteria again washed in salt water. From this a strained suspension was made and 0.1 and 0.2 C.c. of this used in the test. Throughout the test live bacteria were used. Controls: In each test known normal and known positive controls were used. In each series of tests the hemolytic system was tried out in the usual manner, using a water-bath at 37 C. for incubation. After primary incubation for half an hour the amount of amboceptor indicated by the preliminary test was added to our final test-tubes, and the tubes again incubated in the water-bath. Final readings were taken within the following hour." In each case independent readings were taken by the two authors without previous knowledge of the clinical history, and the tabulated results are given, showing their uniformity of positive reactions in cases of pertussis as compared with other conditions. They call special attention to the need of fresh antigen in the test.—Jour, A. M. A., March 28, 1914.

The Senses of Taste and Smell.—If asked to make a distinction between the sense of taste and that of smell, most of us would probably say that besides differences in the organs with which these manifestations are concerned, the stimuli which call their respective sensations into existence are unlike. It has generally been assumed and taught that taste is excited by substances in the state of solution and that smell is called forth by products in a gaseous or vaporous condition. This view, however, has not remained unchallenged. It has been contended by a number of physiologists that solutions may act as stimuli for the olfactory surfaces and some have gone so far as to assert that in normal functioning of the sense of smell in man the odorous particles are caught on the moist olfactory surfaces and dissolved before they can act on the nerve terminals.

The problem of these possible distinctions in the two senses has been taken up in an experimental way by G. H. Parker and Miss Stabler. Selecting as a stimulus a substance—ethyl alcohol—which has both a characteristic odor and a well-marked taste, they have made some comparisons which lead them to conclude that in vertebrates the stimulus for smell is a substance dissolved in the fluids that bathe the olfactory surface, and that in this respect smell and taste are similar. The difficulty in imitating a normal stimulation of the olfactory organs by solutions experimentally introduced into the nose is due, in the opinion of Parker and Stabler, to the inability of the investigator to reproduce the olfactory solvent. This material, the slimy covering of the olfactory surface, is very different from water or even warmed physiologic salt solution. Hence it is not surprising that odorous substances dissolved in these mediums should not act as normal stimuli for the olfactory surfaces. Were it possible to imitate closely the olfactory solvent there might be no difficulty in stimulating the olfactory organs with solutions made up in this solvent.

Both smell and taste are, then, stimulated by solutions, but water introduced into the human nose will cause a temporary loss of the power of smell. Hence the olfactory organs are not appropriately stimulated by ordinary aqueous solutions. Besides the possible different chemical nature of the stimuli, that for the sense of taste is a relatively strong solution, that for smell a relatively weak one. The bearing of these facts has been summarized by saying that we smell enormously attenuated solutions and taste only relatively strong ones. Taste is used in determining the presence of comparatively large amounts of substance, smell for only the most minute quantities. Hence taste is inoperative except when the source is very near at hand, usually in the mouth; whereas smell may be active when the source is far distant, the dilution experienced by the stimulating substance in its spread not having been sufficient to bring it below the concentration necessary for stimulation.—Jour. A. M. A.

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Miscellany

Now instructive, now amusing—but always interesting and worth reading

Our readers will gain much that may be of great value to them by looking over the advertising pages of this issue. There are a number of very generous offers that may be taken advantage of by merely addressing a post card to the advertiser and mentioning MERCK'S ARCHIVES.

WHAT HE KNEW.

The lawyer had a somewhat difficult witness, says a writer in the Milwaukee Journal, and finally asked if he was acquainted with any of the men on the jury.

"Yes, sir," replied the witness; "more than half of them."

"Are you willing to swear that you know more than half of them?" demanded the lawyer.

"Why, if it comes to that, I'm willing to swear that I know more than all of them put together."

THE WHITE PERIL.—It takes considerable effort in this country to work up an interesting amount of alarm about the "yellow peril." If the citizen of China or Japan ever wastes time and nerve force on similar themes he should have no trouble in depicting a "white peril" fit to daunt the bravest samurai.

The history of the last four centuries has been a tale of the depression of Asia and exaltation of Europe; of loss to the yellow man and gain to the white.

When the sixteenth century was born the yellow race outnumbered the white race two or three to one, and the odds in area and productiveness of territory were still against the paleface. Mongolian peoples held supreme control of Siberia, Turkestan, the Chinese and Japanese empires, and the huge peninsula of farther India. Their mastery of Persia was little less complete. The Tartars had recently been beaten back from the walls of Moscow, but they still dominated half of European Russia. The Turks, not a yellow people, but possessing Mongolian affinities, encircled the Black Sea, owned the Danube valley and Balkan peninsula, and took tribute from North Africa almost to the straits of Gibraltar. Samark and still boasted the glories of Tameralne, and Baber was soon to start on the "Mongul" or Mongol conquest of India.

Look at the map to-day. The half-denatured Turk has disappeared from Africa and holds but a hand-breadth of Europe. Siberia, Turkestan and a goodly slice of the Chinese empire are being Russianized. Armed muzhiks guard the tomb of Timour, and English clerks give orders to the heirs of Baber and Akbar. A new world was discovered in the west, and the white man has seized it; a new continent was found in the south, and the white man has claimed it for his own. He girdles the sea and bestrides the land; he has left but two yellow empires independent, and who knows when he may weary of this small forbearance?

Verily, a Chinese jingo would have plenty of basis for alarmist oratory.

One danger, to be sure, may grow out of the very extent of the white dominion. The yellow peoples may conclude that they are doomed anyway, take courage of despair, and set out to do as much damage to the white man as possible before yielding to him. A white nation like our own which is within striking distance of the yellow lands should maintain enough military and naval force to guard against this possible but very improbable event. But in the light of four centuries of history, of the advantages of numbers, wealth, organization and strategic advantages now possessed by the white man, talk of a yellow conquest of the earth is a fantastic dream.—March Lippincott's.

"My good man," said the chronic meddler to the old Irishman who was building him a chicken coop, "why don't you stop drinking?"

"Sor," said Pat, "I haven't taken a dhrink in tin years."

"Oh, come off!" sneered the meddler. "You tell me that, when your nose is as red as fire?"

"Yes," said Pat. "'Tis not the dhrink that makes that nose red. 'Tis blushin' with pride because it attinds to its own business."—Med. Standard.

THE DOCTOR IN COURT.—Ex-President Taft testifies, whenever the opportunity is afforded him, that American court procedures need reform, and no class of the population will say amen to this statement of obvious fact more heartily than will the practicing physician and surgeon. The adducing of testimony in murder cases and will cases where the allegation of insanity is made has long since been a scandal, and sporadic attempts to correct the evident abuses of the present system are even now being made here and there. But, while the contradictions and entanglements of the sensational cases involving the alienist attracts our attention sharply at times through the medium of some exceptional trial, no one seems to pay any attention to the perennially unsatisfactory development of the medical or surgical testimony in the ordinary civic damage or criminal cases that are being tried every day in all parts of the country.

In the first place, the surgical witness is practically always summoned by the plaintiff, be that a single individual or the state. This tends to make the defendant's counsel assume a hostile attitude, and this in turn robs the witness of that scientific calm with which he would describe the case to a colleague—exaggerating nothing and giving due weight to doubtful points. As it is now, the examination is conducted by lawyers who know nothing of anatomy, pathology or surgical or medical treatment. In their examination they are groping blindly, frequently miss the most important points in the answers of the medical witness, amplify some trivial side issue, are evidently mystified themselves, and usually succeed in befogging the minds of the jury to such an extent that a just solution of the question is impossible, and one has to fall back upon the proverbial uncertainty of trial by jury.

It certainly would seem easy to rectify this unsatisfactory condition—unsatisfactory to litigants, unsatisfactory to the medical profession and presumably unsatisfactory to all reputable members of the bar. A medical officer of the court should be appointed to take the testimony of the medical or surgical witnesses, apart from the ordinary testimony as to facts by lay witnesses, to make physical examinations, and question the injured person, and then to make a report to the court and jury as to the actual facts in the case, explaining them as may be necessary and answering questions of counsel. In this way the surgical

history of the case would be complete and unbiased. This medical officer of the court should not be a physician in private practice, but he should have a hospital position in the municipal hospital so that his daily experience should be wide and constantly progressive.

In this way and only in this way will our courts be properly advised in these highly technical matters. The medical and surgical sciences are becoming more highly specialized and more technical every day, and if justice is to be done in our courts, and the public business attended to in as efficient a manner as the business of a prosperous private corporation now is, we must have the assistance of those who know and not be pained by the spectacle of the blind leading the blind as we now see it.—Lancet Clinic.

"Do you mean to say such a physical wreck as he gave you that black eye?" asked the magistrate.

"Sure, your honor, he wasn't a physical wreck till after he gave me the black eye," replied the complaining wife.—London Telegraph.

THE LOAF OF BREAD.—The widespread propaganda for the purity of the food and drug products of this country has resulted in the necessary attempt to standardize all articles which enter into these categories. In the case of certain familiar materials like sugar and coffee, this has not involved any formidable difficulties. The question as to what constitutes mince pie, on the other hand, has aroused storms of claims and counterclaims on behalf of the recipes of different regions and generations. Like numerous other illustrations which might be cited, this experience has served to call attention to the really great diversity of our food concoctions and the pardonable laxness in the use of current terms that appear in the American menu. One may well apply here the proverb, "De gustibus non disputandum est."

It might be expected that so common an article of diet as bread, at any rate, would exhibit some uniformity of composition within relatively restricted regions. Yet, if we accept the findings of the chemist of the Connecticut Agricultural Experiment Station, two hundred loaves of bread, representing the product of seventy-nine Connecticut, one Springfield and three New York bakeries, "showed wide variations in all their ingredients." For example, the moisture content ranged from 27 to 40 per cent., so that in some instances at least the bread contained excessive amounts of water. The ether extract (fat) also showed a wide range, from 0.08 to 4.37 per cent. These differences are largely due to the methods of the bakers. In some cases only flour, yeast and salt are used, while in others milk, butter, lard and sugar, either alone or in combination are employed. The variations in fat are also due in part to the fact, noted by several investigators, that in the process of baking a part of the fat is either destroyed or rendered non-extractable by ether. In some samples the amount of fat found is much lower than could have resulted from the use of any brand of flour. The variations in ash, protein and carbohydrates are due in part to differences in moisture content, but even more to the materials used.

A comparison of the variations in the composition of a supposedly standard product like a five-cent loaf of bread is interesting in other directions also. The actual amount of dry matter per loaf in the Connecticut samples ranged from 7.9 to 12.7 ounces; the average weight of the loaf in nine cities ranged from 12.9 to 15.2 ounces. A critical analysis of the data from an entire State shows that the cheapness of the three- and four-cent loaves indicated a real saving, as far as quantity is concerned, because the relative decrease in price was greater than the decrease in weight. Inasmuch as the price of a unit of bread—the loaf—has for conventional reasons remained stable at five cents, while the cost of the ingredients has increased, changes in the real cost of the nutrients of bread must be sought in the changes of size or composition of the loaf. According to investigations made in New Jersey in 1895, loaves costing four and five cents weighed from 12.7 to 21.8 ounces, average 16.4 ounces. in 1895 in New Jersey 58 per cent. of the five-cent loaves weighed over 16 ounces, and 83 per cent. over 15 ounces, while in 1912 in Connecticut only 7 per cent. weighed over 16 ounces, and only 16 per cent. over 15 ounces. Assuming similar conditions in these two States, the average weight of the five-cent loaf has shrunk since 1895 from 16.4 to 14 ounces, or 15 per cent. When all has been said, the student of nutrition will doubtless still remark that bread is cheap at any price.—Jour. A. M. A.

THE NEED OF MORE POST-GRADUATE STUDY has been commented upon so often that it seems a waste of time to discuss it any further. Efficiency cannot be acquired in the few years devoted to undergraduate study, but to refuse a license to a man until he has attained the highest possible skill is not practicable. The newly licensed young doctor must learn for himself in the special line of work he selects or into which fate thrusts him. Experience shows that he can do this infinitely better if he can spend a few weeks in his dull season every year or two at some near-by city at the feet of those who have already attained skill in that direction. Our post-graduate schools seem to be drifting into this role of supplementing the undergraduate institutions, though they were organized to help busy general practitioners who had not kept abreast of the times through lack of time. Nevertheless, we must utter a protest against the assumption of some of these teachers that the country doctor is necessarily behind the times and is in duty bound to receive instruction from his city brother every little while. As a matter of fact, the great medical advances are often if not generally made by

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country doctors, like Jenner, and the city men stand in the way of progress. The greatest living heart specialist, who has so well explained cardiac mechanism, was a country doctor most of his life. Medical literature is now so voluminous and cheap that the general practitioner in the city or country is made aware of new things almost instantly. It is amazing what splendid and advanced surgery is being practiced in little backwoods towns, and what bad kinds we often see in the cities. We hope, then, to see the post-graduate schools catering more to the urgent demand for instruction which supplements the regular schools, and less to the *supposedly* backward doctors of the country—American Medicine.

The Research Penny.—It is one thing to take care of the sick, and it is quite another thing to discover the cause of a decimating disease. When Lloyd George drew his famous bill for the medical and surgical care of the English workman there was one little clause providing for "a penny for research." In that one sentence is to be seen the prescience as well as the piety of the great statesman.

In England, as in the United States, the pounds are poured out for care and custody of the sick, but a penny is now to be saved for research—"the research penny."

We read in the literature of the early half of the nineteenth century of the hospitals of Europe, and the custody they gave the abandoned and hopeless, dying of cancer, tubercular joints and suppurating wounds. In these bygone hospitals were huddled together the frightful victims of disease. The dreadful dangers in surgical operations from suppuration, from erysipelas and from hospital gangrene made the hospitals of those days hardly less terrible in the public mind than the insane asylums are to-day. The personal pathos of "Rab and His Friends" is paralleled by a sadder picture, when the 65,000 hopeless lunatics are taken each year to the 400 madhouses in these United States never to return. The largess of forty-eight generous States is poured out to maintain these castellated caravansaries of cruel custody, but in all this land there is no penny on the pound for research.

The sensitive nerves of the public are greatly irritated when, seeing 54 per cent. of the insane die from institutional disease with no pretense at cure, anyone begs in the name of mercy for a legal euthanasia. The judges and the lawyers, the ministers and the politicians, all together, raise their voices and hands in holy horror at a "legal euthanasia" for the insane. The crazy man begs for it. His wife and children may plead for it. The distracted medical attendant in his ignorance of the etiology of the disease and in certainty of the issue of it may recommend it; and yet society shuts up the lunatics to die of confinement and cruel custody.

In no State in the Union is there any penny on the pound for research. Illinois spends in the custody of its wards 40 per cent. of the total State budget, but no "penny for research." Yet research is the only way out. Pasteur and Lister, Ogston and Rosenbach, von Langenback and Billroth and painstaking von Nussbaum did more to endow the hospitals of the world than all monarchs, millionaires and municipalities can ever do with the legacies of the centuries to come. And so, too, will it be with the great research into the causes of the insanities, and the ways and means of cure and prevention. The "research penny" is our only hope.

What a fluttering of anxiety is this about the insane immigrant? What a fuss and cruel hardship in sending now and then one of these back to Europe and away from the family here! And yet, in New York, in Massachusetts, in Michigan and in Illinois, where psychopathic institutes have been legally established, there is no research carried on with any outlook to the solution of the problems of the insanities.

It would not be fair to leave the picture so dark and gloomy since some ray of hope may be expressed. Perhaps the women with their new responsibility in politics will intuitively see what may be done by research and go into the administration unrestrained by pessimism, convention or graft.

Again, from an unexpected direction new light has been thrown upon the condition of the insane. The new method of Abdorhalden has shown that the patients with dementia precox, who make up more than 60 per cent. of the population of our madhouses, are sick at the pancreas, in the germinal glands, and often also in the thyroid and the cerebral cortex, thus overthrowing the pessimistic contentions of the psychogonists, and clearing the way for mechanistic research. But sure it is the foundations of the disease are laid bare and the young men of our day have set before them a *magnum opus* as inspiring as that which consumed Pasteur and his school.

Our statesmen may see the cunning of the great Welshman, and may upset plans of our medical and surgical tradesmen, but we may well forgive them, as our children will bless them, if they establish for all time "the penny for research."—Lancet-Clinic.

Noise as an Etiological Factor.—Noise and neurasthenia are being connected as cause and effect in Paris, and several members of the Academy of Sciences are discussing the matter seriously with the view of abating the nuisance and advising everyone who can to run away from it if it cannot be diminished to endurable limits. The anti-noise crusade has been carried on largely for the benefit of people who have been made neurasthenic from other causes. They are exquisitely sensitive to noises which the normal ignore. To them the sounds are real traumata, which have the same effect on nerve cells as any other mechanical injury. Recovery may not only be prevented in noisy surroundings, but the disease made actually worse. The new idea is that healthy people suffer the same traumatism, and, though they have strength enough to ignore it, the effects accumulate and finally make themselves felt to even the most stolid. Many have said all this before, but no one has attempted to give specific instances until Edmond Perrier, director of the Paris Museum of Natural History, accused the habitual noises as being the cause of the neurasthenia so common among traveling mail clerks, printers, typesetters and typewriters. This is an unfortunate illustration, for the nerve strain of forced attention when fatigued and working in hot rooms are fully competent to account for the exhaustions. If an eye-strain exists, and it generally does, the results come on more quickly of course. Barbers, who are not troubled by great noises, are badly affected, while boilermakers do not figure so largely in it if at all. We are afraid that Perrier has not made out his case. Nevertheless, the damage of noise seems appreciable, and it is likely we will be able to show it statistically in time. The anti-noise crusade is a worthy one.

and we hope it will not die of inanition, but be revivified to the end of abating all the unnecessary sounds which now jar our tingling nerves. Tugboat captains declared that they could not get along unless they used their whistles for about everything including the calling of the crew from a saloon, but they were wrong, and have become fairly decent in preference to going to jail. It is time to stop other street cries and unnecessary noises, so that a needed signal of danger may be low enough to attract attention and yet be unirritating.—American Medicine.

PALEOPATHOLOGY.—With new "ologies" coming into vogue in science to-day about as rapidly as new species of micro-organisms were described a few years ago, it begins to tax one's memory to relegate each novelty to its appropriate place among the ever-growing variety of disciplines which one is expected to appreciate, if not actually to master. Paleopathology is one of the latest. This word was coined by Dr. Marc Armand Ruffer, not to suggest the science of extinct diseases, as a comparison with the well-known term "paleontology" might lead one to suppose, but rather to apply to "the science of the diseases which can be demonstrated in human and animal remains of ancient times." The singular conditions of custom and climate which have preserved the mummies of old Egypt until the present day have made it possible to conduct post-mortem examinations on the people of the earlier centuries and to compare their anomalies of anatomic structure or the defects produced by disease with the pathologic manifestations of the present day and generation. Such investigations have already unfolded many facts of interest in respect to the existence and incidence of disease in bygone times, and have contributed important facts to the history of medicine.

The perfect preservation of many of the bodies which have become available in Egypt is little short of remarkable. The features of the real mummies are widely known. Coptic bodies which have recently been examined by Ruffer belong to a somewhat different class. They came from Antinoë, in Upper Egypt, and dating from the fifth to sixth century they were therefore from about 1,400 to 1,500 years old. They had undergone no artificial process except that, at one time, they had been covered more or less extensively with salt. The real preservative had been the dry Egyptian sand in which they had originally been enclosed in wooden coffins. Never having been disturbed by the embalmer, the organs were *in situ,* and the bodies contained no resin, gum or any materials such as mud, sand, rags, etc., generally used in old Egypt for packing the body after removal of the organs.

In our environment, where special precautions are promptly necessary to preserve the remains of the body from deterioration or decay, it is surprising to hear of microscopic sections showing the glands of the alimentary tract in the Coptic bodies in a remarkably fine state of preservation after all these centuries, or to learn that the lobes of the brain and some of the convolutions were recognizable and that the fibers and valves of the heart could be made out, or again to note that in two aortas well-marked calcareous plates were found. Abnormalities of the bony structure are, of course, more perfectly preserved. Ruffer points out that the demonstrable occurrence of spondylitis deformans among ancient Copts is more proof that the disease has existed throughout Egypt from the remotest

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times and is independent of climate. It has been found in bodies buried close to the Mediterranean shores, in bodies from Upper Egypt and Nubia, and even in a skeleton buried in the tropics of Merawi, one of the hottest and dryest places in the world. In the Coptic bodies a peculiarity of the disease is that as a rule it was localized to a few vertebrae.

Among other pathologic phenomena not hitherto described for ancient peoples, Ruffer reports instances of hypertrophy of the middle turbinated bones. This has now been found in both Egyptian skulls and Greek skulls dating from the time of Alexander the Great. Pathologic changes of the soft parts, recognizable microscopically, were not common. Judging from two cases of hypertrophied spleen which were found in Coptic bodies, Ruffer ventured the suggestion that these people suffered from malaria.

Pyorrhea alveolaris and periodontitis appear to be as old as the human race. Evidence of such disease has been found in prehistoric skulls and in the specimens from almost all nationalities. Ruffer has found nothing to suggest that the Copts knew anything about dentistry. The long-recognized bad state of the teeth of ancient Egyptians is again emphasized in the Coptic bodies. Almost every skull has some serious dental defect. It is suggested that this may perhaps be accounted for by the fact that very little care of the dentition appears to have been taken. The thick incrustations of tartar are sufficient evidence that the Copts did not clean their teeth at all. In many people and animals the absence of the tooth-brush is compensated for by the fact that the food is hard, fibrous and raw, requiring a good deal of chewing, which mechanically cleans the teeth. In ancient Coptic times this does not appear to have been the case, for in contrast to the predynastic bodies in which attrition is very marked, this is slight; in fact, being less marked than it is in Egyptians of the present day. Ruffer concludes that the Copts of Antionë lived chiefly on cooked soft food, chewed without effort. Caries was extremely common and was possibly due to the nature of the food consumed.—Jour. Am. A.

Effect of Belt Constriction on Hunger.—Investigations were undertaken by Prof. Dr. Rudolf Lennhoff, as reported in the "Vossische Zeitung," to ascertain in what manner constriction about the body in the region of the stomach lessens hunger, which is a plan sometimes followed by hungry tramps and others. Metallic substances were mixed with solid food, such as potatoes, and fed to men. The *x*-ray revealed that a contraction of the stomach took place and a relatively small quantity of the food proved sufficient to satisfy the appetite. When liquid food was given the contraction was considerably less and a larger quantity was necessary for satiation. Another experiment in which the liquid food was introduced through a tube showed that twice the quantity was required to produce satiety. The conclusion was that the stimulus of swallowing by reflex action caused contraction of the stomach and produced a lessened sense of hunger. This suggested that artificial pressure over the stomach by means of a belt, as in the case of the tramp, produced the effect, and this proved to be the case. In order to eliminate the effect of suggestion, the experiment was tried on insane persons who were allowed to eat as much as they pleased; during the experiment they ate less. The conclusion is that the sense of satiety is influenced by the act of swallowing, which causes contraction of the stomach. —Exchange.

Obesity in Children.—Advanced studies in the field of endocrinology, the science of the ductless glands, have made it evident that obesity in children can no longer be looked upon in all cases with confident equanimity. A relatively large proportion of these instances have been traced to some disorder of one or more ductless glands, the phenomena, which stands out with special boldness, pointing more or less clearly to the organ which is the seat of the fundamental lesion. The diagnosis of the particular form of obesity would be relatively simple did each diseased ductless gland awaken characteristic phenomena, but there appear as complicating factors—owing to our ignorance of the precise functions carried on by these organs—concomitant symptoms which seem sometimes to defeat any attempt to establish a clearly defined syndrome. The accumulation of clinical material and of experimental data is beginning, however, to elucidate this complex problem and to render possible at least an approximate diagnosis, not only of the various forms of obesity in children due to the ductless glands, but of the identity of the particular gland acting as main factor in the morbid process. This can be said with any degree of confidence, however, aside from the familiar form due to insufficiency of the thyroid, of only two organs, the pituitary and the adrenals.

In the field of the pituitary body, accidental destruction of that organ, as by a bullet (Madelung's case), and lesions of the pituitary in the course of infectious diseases, on the one hand, and experimental removal of the pituitary in a large number of animals, on the other, have given us a reasonably clear idea of the form of obesity due to inhibition of its functions in the young. Beside the obesity, there is sexual infantilism with absence or paucity of hair over the pubis, amenorrhea or dysmenorrhea, and, in some cases, mental disturbances or moral degradation, with, perhaps, epileptoid phenomena. The functional relationship of the pituitary with other glands is shown by the presence in a small proportion of cases of more or less clearly defined symptoms of hypothyroidism, a waxy condition of the skin, with intellectual torpor, and even nanism. The opposite condition, unusual growth, and even gigantism, may also occur; but this is due to an initial disorder of the pituitary involving temporary overactivity of the organ, and succeeded by the lesions to which hypopituitarism is due, the cause in turn of the obesity and other symptoms described above. Radiography in such cases may indicate a small sella turcica, but lesions of the pituitary proper may not entail changes of its bony support, thus reducing radiography to the rank only of confirmatory evidence.

About the only disorder with which this condition may be confounded is a form of obesity due to the adrenals, when these organs are the seat of malignant hypernephroma. The obesity of this disease, which occurs as a rule in girls between the first and eighth year, is sooner or later accompanied by phenomena which distinguish it clearly from pituitary obesity. The child develops with unusual rapidity, the face, genitalia and pubis, and sometimes the whole body, are covered with an abundant growth of hair, and the genitalia develop so rapidly that

these structures in a child of eight years may resemble those of an adult. The voice is usually harsh and deep, the skin swarthy, while the disposition becomes altered, the child being sullen and moody. Excessive thirst and appetite are common. The abnormal growth may suggest gigantism due to pituitary disease, but the other phenomena render error almost impossible—N. Y. Med. Jour.

Oriental Notes.—Not long ago the French Government undertook the collection of vital statistics and general information as to the sanitary status of certain of the European and Asiatic provinces, and for the purpose forwarded to the authorities of these provinces blank forms —questionaires—accompanied by the usual polite note requesting that the data be supplied thereon and returned to the statistical bureau in Paris.

The pasha of Damascus promptly replied to the questions asked as follows:

Q. What is the death rate of your province?

A. It is the law of Allah that all should die; some die young, some die old.

Q. What is the annual number of births?

A. Allah alone can say. I do not know and hesitate to inquire.

Q. Are the supplies of water sufficient and of good quality?

A. From the remotest period of time no one in Damascus has died of thirst.

Q. Give general remarks as to character of local sanitation.

A. A man should not bother himself or his brother with questions that concern only Allah.—Exchange.

Chemistry of the Saliva.—The chemistry of the saliva attracts less attention in the minds of scientific men than might be expected from the importance of the subject and the value of some recent studies in the differences between saliva and sputum. An article on both topics in "Deutsches Archiv für klinische Medizin," p. 231, 1913, may usefully be noted now. The author, E. Maliwa, defines the sputum as the pathological secretion of the respiratory mucous membrane, for the small quantity of normal sputum —or should we say expectoration?—comes from the pharynx and the glands in the recesses of Morgagni. On the saliva proper views are not so clear. In the first place, its chemistry is uncommonly complex. It covers chemistry organic and inorganic, physiological and biological, and, most difficult of all, the chemistry of the lowest orders of fungi and animal life. Another writer, in "Riforma medica," seizes the opportunity to examine in some detail "the physical and chemical changes produced by the reaction of the bronchial mucous membrane and lungs in disease and the mixture of saliva, nasal secretion, residue of bacteria, and particles of food." Some of the results are highly interesting. In pneumonia the salts in the saliva are in inverse ratio to the degree of inflammation. It is believed that the loss of salts in this way in tuberculosis is a measure of the progress of the disease. Maliwa, in fact, maintains that the course of phthisis to a great extent turns upon the proportion of compounds of nitrogen in the sputum, and the essential knowledge of the individual case is supplied by the methodical examination of the saliva. The level that these fluctuations of nitrogen reach is also a means of watching the effects of therapeutics. As regards special substances discovered in the course of these analyses, he mentions pentose, and as it is found only in phthisis, it clearly indicates the nature of the symptoms. Whether this pentose will ultimately be found in other diseases is not certain, but these studies are illuminating examples of what may be done in analysis of the waste products of the body.—N. Y. Med. Jour.

Hygiene and Decency: or Sentiment in Sanitation.—Travelers may often see in railway carriages in Italy the notice: *Per Igiene e Decenzia non Sputare* (For Hygiene and Decency do not Spit). There is here a lesson for sanitarians. Dirt is not always deadly or even dangerous, and those who teach that dirt is necessarily disease-producing will find difficulty in explaining the often long-continued and robust health of workers in sewers or on streets or about garbage piles or in stables or dusty trades. . . . The fact is that sentiment—doubtless fortunately —still plays a mighty part in the world, and that the public is, and ought to be, glad to pay for decency as well as for safety in food and drink. The moral is obvious. . . . Teachers of hygiene and sanitation should not forget to enforce the idea that these sciences stand for cleanness hardly less than for disease prevention. Some cities with dirty streets very likely have lower death rates than some with clean streets; some families in dirty homes less sickness than some in clean ones; and yet it does not follow that cleanness is superfluous. Fire and death very likely do not occur any less often among the insured than among the uninsured, but when they do occur the insured are better off, and this is probably the basis of the general opinion of mankind that both fire insurance and life insurance are worth while. It is very likely for some such reason as this that public opinion requires cleanliness—an opinion which, like many other opinions, has finally become a sentiment; for cleanliness is a kind of insurance—not always sufficient to prevent disease, but always worth while.—American Journal of Public Health.

Do Men Exhaust Their Originality at Sixty?—Ehrlich and von Behring have reached that age, and from all over the world congratulations have poured in upon them. The great demonstration seems tinged with a sad note as though these men had reached the end of their productive life. They will work on the old lines until they die, and we hope the final end will be many, many years off, but will the product be worth while? We hope it will be great; but can a brain or body of sixty cut out new trails in the wilderness of ignorance? Osler showed how rarely it is done, and many thought that he said that men over sixty could not do any thing at all. A great work may not be culminated until long after that age, but great discoveries are made by mere boys. A few even believed that he said that men over sixty ought to be chloroformed, though he himself was nearly sixty at the time. Some of his critics were too old to understand what he said. The French have recently discovered that Osler was right and are rejuvenating their army as a means of preserving national existence. They have concluded that a captain must retire at fifty-one, major at fifty-four, a lieutenant colonel at fifty-six, colonel at fifty-eight, brigadier general at sixty generals of division at sixty-two and generals of corps at sixty-four, while members of the High Council of War may hang on a year longer. A similar scheme was proposed for our army some years ago, but the

Journal of the Military Service Institution refused to publish it. The editor was about seventy. Press reports seem to indicate that the authorities are considerably worried as to what disposition to make of those officers over sixty who are really dead, but whose friends hate to tell them. Why not retire them at sixty? The few who are still mentally alert are not indispensable, and the rest can do an awful lot of harm. Grant said that in war no general should be over fifty.—American Medicine.

Old, But Still Good.—An old darkey, who lived some distance from town, had a very sick mule. He drove into town to see the village veterinary as to what to do for the mule. The doctor told him to get a pound of calomel and a hollow glass tube and blow the calomel through the tube down the mule's throat.

About a week after that the darkey appeared in town looking very dejected and pale. He met the doctor on the street and said: "Say, boss, I got the calomel and the tube and put the calomel in the tube," and just then the doctor asked him if he blew it down the throat of the mule, and the darkey said:

"No, boss, old Pete he done blew first."

Some Day—the day of longings satisfied, of hopes realized, of ambitions gratified. Some day—the day when truth will prevail and error will cease to exist; when man will have faith in his brother and woman will believe her sister; when the child will not need to curse its begetter for its stigma of shame; when the father will not deny the child whose mother bore no gilt emblem of propriety upon the second finger of her left hand; when the universal conscience will decree that justice shall raise and exalt, not crush and destroy. Some day—when all will live in unison with each other, in harmony with the universe and its unalterable laws; when peace on earth, good will to men, will be real in the spirit and not a beautiful fancy. Some day—the day to come, be it the morrow or when the soul that moves the heart to beat and the brain to know leaves us as light leaves the candle which has been snuffed, and this mass of flesh and bone, brain and sinew becomes food for hungry worms or matter to follow the laws of chemical decomposition, or perhaps when to-day is reckoned in future ages, our mightiest efforts and our grandest deeds may become a study for wise men who want to know; what cheer, what promise in that some day, the red letter day of our lives or of eternity!

He who looks forward cares not to look back. Like to him who has crossed the river Lethe, the past is oblivion. If he looks beyond the six feet of earth and the marble slab that is destined to bear his name, to him is opened a vista, illimitable in its width, eternal in its length, glorious in its height, and filled with the wondrous works of man. And whether it be with the infinite intelligence that the great scientist tells us survives the grave, or whether it be with the eyes of the dreamer whose vision has no bounds, the view is the same; the same some day, the same man's mastery of time, of space, of life, of self. That some day man will learn the truth and then—*nirvana*.—Editorial from American Practitioner, Feb., 1914.

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Testamentary Egotism.—The study of the brains of normal and eminent men is a necessity, not only for the advancement of anatomy and physiology, but for possible discoveries leading to better and surer surgery. Our material for study has been almost exclusively the failures who would otherwise go to the Potter's field. We have long been urging all men, big and little, to will their brains to research workers for this purpose. It is therefore not pleasant to read in the dispatches from Europe that the act of Alphonse Bertillon in leaving his skull by will to the Academy of Medicine was an act of "testamentary egotism.". Such an act does not indicate any more egotism than the implication that the testator does not consider himself either a failure or abnormal. There was every reason why Bertillon should do as he did without the slightest egotism. He was one of three famous sons of a famous father, and it was only natural that his lifelong studies in anthropology should impress upon him the need of more study of those above the average to supplement what we know of those below it. We want also the brains of just plain, average everyday, ordinary sort of men, though we must confess that this is the type which most desires to be like the common

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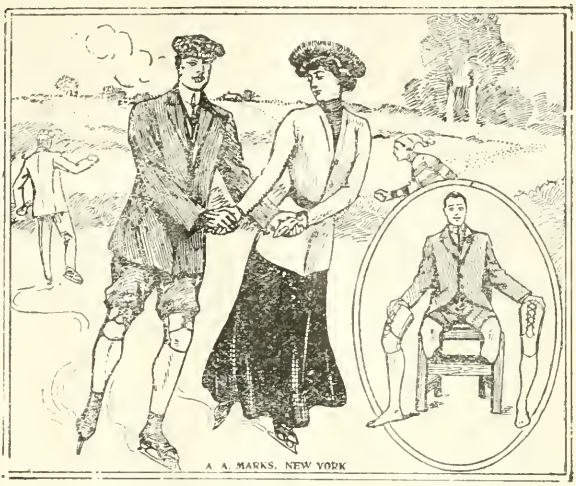

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herd and which is last to break the conventions. They want to be buried like their ancestors, and fear being called egotistical or abnormal or eccentric. It requires a big man or a very little one to break conventions, and we will have to do without the average.—American Medicine.

THE OLD POSTERIOR OPERATION.—"I see they have operated on a Philadelphia boy's head to make a better boy of him."

"That isn't where my dad used to operate on me to make a better boy of me."—Exchange.

CONNECTION BETWEEN THE SEXUAL DEVELOPMENT AND THE HAIR.—Sabouraud has been studying for twenty years the pathology of the scalp, and states that there can be no doubt that the falling of the hair and the growth of the hair are linked with physiologic genital development. Physicians have too long disregarded this branch of physiology in animals, especially the "love plumage" of birds. The yard-long tail-feathers of the peacock, for example, sprout and fall in the six months which include the rutting period. He has found that after a hair has been detached it does not drop out until seventy-five or ninety days later. This delay explains why some women who are liable to habitual losses of hair find at the third month of pregnancy that their hair is unusually thick, and that the dropping out does not begin anew until three months after delivery. He says that children, women and, apparently, eunuchs never become bald like men. The tendency to baldness, he adds, makes itself manifest between 17 and 22, and it is always well defined before 30. The ancient Greeks represented satyrs as bald, but with thick youthful hair elsewhere, showing that the baldness was premature. There are certain affections of the scalp which develop exclusively in children, such as tinea tonsurans; this always subsides at about puberty. The adult scalp seems to be invulnerable to this form of tinea. The women and men whose hair is inclined to drop out are generally those with a tendency to profuse growth of hair elsewhere. Aristotle asked, centuries ago, why men alone become bald.—Exchange.

HOW A BABY LOST $12,000.—In the May Woman's Home Companion appears a very interesting article entitled "The Safeguarding of the Child," by Julia C. Lathrop, chief of the Children's Bureau in the United States Department of Labor. In the course of the article Miss Lathrop shows the importance of the registration of births. She makes the point that thousands of children's lives could be saved if in the first few hours of life they could have proper attention. She also proves that in the United States no proper records are kept of births. In the following extract from her article she tells the story of a case where the failure to register the birth of a child cost the mother dearly:

"The importance of a birth record is very well illustrated by the case, recently brought to the attention of the Children's Bureau, of a young Swiss immigrant who, coming to this country and settling in Indiana, was killed, leaving a widow and infant child. The mother, in dire poverty, had trouble to keep herself and her baby alive by scrubbing and sewing. One day there came to her an official letter from the government of Switzerland, stating that her late husband's brother had left $12,000 to this child.

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All that was demanded was proof of identity, with the customary birth certificate. But there was no such certificate, and the much-needed money was lost.

"Another instance of the kind, likewise in Indiana, had to do with a farm which was left to a girl by her grandfather. Being twenty-one years of age, she was entitled to the property. But a dispute arose. Her father, who had the use of the farm during her minority, claimed that she was only nineteen. There was no birth certificate to prove her age. But, happily, a neighbor remembered that a valuable cow belonging to her grandfather had given birth to a calf on the same day that the girl was born. The birth of the calf had been duly recorded, and, this evidence being accepted by the court, the young woman obtained possession of her farm."

LAW AND MEDICINE.—Lawyers profess to have little respect for medical evidence, mainly, we believe, for the reason that so few questions bearing on medical science admit of the simple answer "Yes" or "No" so dear to the legal mind. Then, of course, doctors occasionally differ in opinion, but the lawyer who is inclined to scoff should remember that he makes his living by differing from his learned friend. Pope's famous line,

Who shall decide when doctors disagree?

so often quoted as if it applied to doctors of medicine, really refers to doctors of divinity, or, more strictly, of casuistry. If a doctor in the witness box tries to explain his evidence, he is generally told not to make a speech. On the other hand, judges and counsel claim full liberty to discuss medical questions, and the results are sometimes tragic. More often, however, they are, to the scientific mind, merely laughable. A curious story is told in the Journal de médicine de Bordeaux of February 8, which, even if it be not strictly historical, serves well to illustrate the courage with which a lawyer will meet an argument that from the medical point of view is absolutely crushing. A laborer on the quays at Bordeaux was charged with criminal assault on a little girl of twelve. A medical examination showed that the child was suffering from gonorrhea. The accused was then examined, but no trace of gonococcal infection was found. The diagnosis in the case of the little girl was then revised to vaginitis. At the trial a number of witnesses gave evidence, the child cried, and the accused vigorously protested his innocence. Then came the advocate-general, who dwelt eloquently on the relaxation of morals, on the sanctity of the family, on the bad antecedents of the accused. In time, of course, he had to come to the medical evidence. Turning to the counsel for the defence he said: "My learned friend will bring forward an argument which he thinks conclusive. He will tell the court that as his client is not suffering from gonorrhea he cannot have given the disease to the little girl who has been before you, and that consequently he cannot be guilty. But who shall tell you, gentlemen, that this man who is not an example of morality, this man who is a pillar of houses of ill-fame, is not also suffering from vaginitis?" *Solvuntur risu tabulae.* As we have hinted, we are not sure that this edifying story is absolutely accurate, but even if it is not true, we say with Æsop "this fable shows" what lawyers are capable of in dealing with medical evidence.—Brit. Med. Jour.

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Hand in Hand.—"I tell you, Pat, my boy," the big man of the town confided, laying a patronizing hand on the young Irishman's shoulder, "I wish I had your tongue."

"Sure, sor," grined Pat, "but it would do yez no good without me brains."—Woman's Home Companion.

Importance of Calcium in the Genesis of Atheroma.—Scandola draws attention to the retention of calcium salts which occurs in atheroma and arterio-sclerosis, and to the advantage to be gained by a calcium-free diet. Animal experiences show that it is much easier to induce atheromatous changes in rabbits fed on a diet rich in calcium than in rabbits fed on food poor in this constituent. It is now recognized that the calcium introduced in flesh foods is more easily absorbed than that introduced in vegetable foods. The author has examined the calcium content in various organs, and at different ages, and his results confirm those of other observers; he has also examined the calcium content in the different arteries, and at various ages. He further removed part of the right carotid in dogs, and then gave them a hypercalcium diet, and found that after such a diet the tunica media showed certain changes (photomicrographs are given) corresponding to those seen after adrenalin injections; the tunica intima was not affected. Testing the elimination of calcium in the healthy and in the arterio-sclerotic, he found that more calcium was retained in the latter case. If this is the whole truth as to calcium, it is clear that a diet rich in calcium should not be given to arterio-sclerotics, and that the diet usually suggested—for example, milk, eggs, broths, etc.—is all wrong, as these contain a greater percentage of calcium than meat, potatoes, etc. The author gives brief dietary lists showing the calcium content in various foods. As regards elimination, he says that the retained calcium is not eliminated by the administration of sodium iodide, phosphoric acid or sajodin, the drugs with which he experimented.—Brit. Med. Jour.

The Teacher's Theory Shattered.—"Children," said the teacher to his pupils, "you should be able to do anything equally well with either hand. With a little practice you will find it just as easy to do anything with one hand as it is with the other."

"Is it?" inquired the urchin at the foot of the class. "Let's see you put your left hand in the right-hand pocket of your trousers."—Ladies' Home Journal.

Heredity.—Exaggerating the power of heredity is the besetting sin of the students of this subject, as we have often remarked. Unless the tendency is checked by physicians we will drift into a false position. Specialized workers always do magnify the importance of their own field, and carry the world with them if they are persuasive. Much attention is now being given to imbecility and other nervous defects, and the idea has been expressed in a popular article that "with the rarest exceptions the cause of imbecility is heredity and heredity alone." We must protest against the serving up of such nonsense to the law public, who are not able to detect its essential absurdity. If it were true, then an imbecile's ancestors would be imbeciles back to the

first pair. As the whole race is descended from only a few individuals of primitive stock, we ought all to be imbeciles. There is no question that imbeciles do appear in defective stock far more often than in normal, but the process must have had a beginning sometime. Every defect has a cause somewhere. We as physicians must look for the cause and not sit down like fatalists saying it is God's will—heredity. Only a savage's god would will that—by Binet's test 30 per cent. of school children should be subnormal. As a matter of fact, much imbecility has been traced to toxemia, mostly syphilitic, though any maternal infection will cause abnormal fetal development. Then again it is an accepted fact that a large number of the 30 per cent. subnormals are results of defective nutrition. Instead of being unpreventable results of heredity, the vast majority of man's woes are brought on himself by his own ignorance of proper ways of living. They are strictly preventable, environmental and not transmissible. It is absurd, for instance, to forbid the marriage of a man and woman simply because tuberculosis has appeared in each stock. That policy would exclude nearly all civilized races. As a fact, we are coming to think that neither this disease nor the tendency to it is hereditary, as we all contract it in infancy, and as it remains latent and harmless unless we lose immunity from some other adversity.—American Medicine.

Sanitary Conditions in Porto Rico.—Owing to the density of the population and the ignorance of the people of even the elements of hygiene at the time of American occupation, coupled with a lack of funds to install an extensive sanitary service, sanitation on the island of Porto Rico, judged by American standards, is still in a very crude state, but within the limits of the means provided, the sanitary service has made commendable progress, according to the report of the chief of the Bureau of Insular Affairs for the year 1913. Among the many difficulties to be overcome are: Lack of good water supply, an almost total lack of good sewerage and garbage disposal system, unsanitary disposition of offal of slaughterhouses, lack of sanitary markets and protection of food products in their manufacture and disposal for sale; lack of hospital facilities; overcrowding and unsanitary conditions of municipal jails, some of which are used for the detention of violent insane persons; congestion in the homes of the laboring classes, and contamination of milk supply. At the close of the present fiscal year the civil service roll of the sanitary service contained 312 positions, of which all but ten were held by Porto Ricans. This necessitated a great deal of work on the part of the American and Porto Rican medical officers to educate sanitary inspectors and other agents of the service. One of the most difficult things with which the service has to contend is the lack of vital statistics. Except in the larger towns it has been found impossible to ascertain the cause of death in the majority of cases, due to the fact that there are no doctors. Statistics covering births and deaths are accurate, however, as these can be obtained from church and cemetery records. Infant mortality under the age of five years constitutes nearly 50 per cent. of the total deaths during the year. The reasons for this are being investigated, and it is believed that, in so far as such excessive mortality may be traceable to poor milk supply, a remedy may be found in the near future. The sanitary service as at present organized, in addition to its ordinary duties of preventing epidemics, involves inspection of all public buildings throughout the island, as well as the private ones where transmissible diseases are known to exist, the eradication of mosquitoes, the approval of plans and the inspection of buildings as to sanitary engineering, biological laboratory work, veterinary inspection, the study of transmissible diseases, the enforcement of pure food and drug regulations, and the preparation of vital statistics. During the year there were 41,002 births, or 35.19 in a thousand of population; 16,400 marriages, or 14.08 in a thousand of population and 26,034 deaths, or 22.35 in a thousand of population.—N. Y. Med. Jour.

Acute Indigestion.—The mortality from acute indigestion seems to be rising about as fast at that of cancer.

Just why it is that a man perfectly sane and sensible in affairs of business or in his social relations will attempt to carry on a process of personal nutrition with practically no knowledge on the subject is one of the modern mysteries.

A person's efficiency is dependent entirely upon nutrition, and, as efficiency is the greatest factor in the success which he is so earnestly striving to accomplish, it would seem to be a most logical step for him to reason out for himself that he should make a study of the digestion problem, and thus be able to secure the maximum benefit without taking the chance of developing some eccentric combination of the stomach contents which will practically produce an explosion and incidental heart failure.

The intelligent public does not think it advisable to concentrate its mind too much upon the state of the bodily health, which is, of course, the correct way in which to look at the subject; but that does not imply that ignorance of physiology and digestion is a state of bliss. It is rather a process of skating over thin ice with the eyes shut.

Fortunately the laity are awakening from their somnolent attitude as to physiologic cause and effect, and are thus able to anticipate the possible or probable effects of perverted function. This leads them to the doctor's office, often more for enlightenment than for medical treatment. When the time arrives that a considerable proportion of the doctor's office work is made up of brief lectures on physiology, that state of affairs will be greatly to the advantage of both physician and patient.

Dosage of Styptol.—During the last five years, G. Foy, of Dublin, has had occasion to prescribe styptol in the various forms of uterine hemorrhage, and he reports that excellent results were obtained with very large doses. He prescribed doses of 10 grains, while the usual dose is only 1½ to 2¼ grains. In one case, 10 grains were given every two hours, until 12 were taken, without the least unpleasant result. His rule is to prescribe the drug in intervals of two, three, or four hours, according to the severity of the case. Dr. Foy finds styptol, as a styptic, superior to any therapeutic agent and shows that it may be prescribed in much larger doses than those usually recommended.—Med. Press, Nov., 1912.

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ICHTHYOL INTERNALLY IN THE TREATMENT OF PSORIASIS

By Dr. A. Rose, of New York

FOR two thousand years physicians have been familiar with the clinical symptoms of psoriasis, with its course, its diagnosis, exactly as Hippocrates was familiar with it. Since Hippocrates the histopathology has been studied and still we do not know what psoriasis is, we have not found its nature and its cause.

The treatment of psoriasis has thus far been empirical. The chief internal remedy has been arsenic, but arsenic is no panacea for this disease; it does not help in all cases and after it has been of some service in a given case, it will disappoint when its administration is repeated. Some have assumed that its effect is due to dilating the blood vessels, but this is an unfounded assumption.

The treatment of psoriasis in the present state of our knowledge can do no more than remove temporarily the morbid changes of the skin and limit fresh eruptions; actual suppression of the latter or a permanent cure is beyond our power.

Very extensive studies of the beneficial effect of the exclusion of nitrogenous matter from the food of psoriasis patients have been made and recently published by the Dermatalogical Research Laboratory of the Philadelphia Polyclinic for Graduates in Medicine. The observations comprise the years of 1912 and 1913 and are not yet concluded.

Considering on the one hand all that has been investigated by Unna on the histology of psoriasis and on the other hand all that is known of the physiological action of ichthyol, we are astonished that nothing has been heard thus far of the internal administration of this remedy in this disease.

Hebra's own investigations together with those of Wertheim and Neumann, led him to the clonclusion that the primary process in psoriasis was one of inflammation of the papillary layer or at least a process which could be compared with inflammation. Unna, after having made anatomical injections, gives the following description of the condition of the vessels of the stratum vascualare: The arterial capillaries for the papillæ rise in stretched course (gestrecktem Verlauf) vertically from horizontally, only slightly dilated, arteries of the upper rete and divide, as a rule, to supply two or three nearby papillæ. Arrived in the papillary heads their lumen becomes dilated and they increase so much in length that everywhere instead of an upper vascular arch a two- or threefold loop, bent to and fro, or even a whole convolution of loops is formed which takes the place of the upper part of the descending venous leg of the capillaries. Then follows at a point situated further down, mostly in the center or in the lower third of the papilla, a sudden, marked dilatation of the capillary vein, which tales at once again an extended course and appears in the neck of the papilla as a wide tube alongside of the much narrower arterial leg. Out of this union of the wide venous capillaries develop now the considerably ectatic veins of the upper rete vasculosum which first attract our attention in all the injected

preparations of the psoriatic skin. Further downward the difference between the arteries and the veins is by no means as great; here both kinds of vessels, compared with the normal are only moderately dilated.

In view of this observation it is to be assumed that the prominent characteristic of psoriasis, the formation of scales, is to be attributed to trophic disorder in the epidermic cells in consequence of the pathologic process in the papillary part of the cutis. We have here an inflammatory process analogous to that which we find in quite a number of skin diseases which are considered inflammatory.

The process begins, therefore, in the subcapillary rete vasculosum or in the papillary vessels. Unna has formulated a theory of his own as to what leads to the formation of scales. Although he admits inflammation, he attributes the first changes to a pathogenic, but as yet only hypothetic, morococcus.

There are two theories at present under discussion: the parasitic and the neuropathic. Concerning the former the fact is that thus far all attempts to find and to demonstrate the pathogenic microbe have failed, and as yet we have no conclusive evidence of a transmission of the disease.

Not only the first but even up to date the best description of the physiological effects of ichthyol given internally was published by Nussbaum in the year 1888. I have inserted an almost complete translation of it in one of my papers on ichthyol[1] and I beg to refer to it. Nussbaum says: "There are a great many diseases for which the internal use of ichthyol has been recommended. Not only in rheumatic and gouty affections, but also in an army of skin diseases has it been given with gratifying results. In different forms of lupus and lepra, of eczema and herpes, have internal and external applications been of good service. All capillary dilatations, red noses, chronic redness of the pharynx, hyperæmia or the larynx, even asthma complicated with eczema, gastric disturbances, pelvic neuralgias were treated successfully with it. All the diseases and affections in which ichthyol is useful are characterized by hyperæmia and dilatation of the capillaries, and I have observed that whenever ichthyol is applied in such cases of dilatation it causes constriction."

I may be permitted to recapitualte here a case described in the paper quoted:

Ever since the year 1885, after I had learned the details of Bismarck's case (fully described in the same paper), I employed ichthyol extensively. One of my first cases was that of a lady who for many years had been suffering in a most distressing way from urticaria. I ordered ichthyol with the understanding that it should be taken for at least a year without interruption. In the course of five or six months she was completely and permanently cured.

The question arises: Was this happy result due to the constricting effect of the ichthyol on the dilated capillaries, or was it due to its effect on the general metabolism, or a specific action of the sulphur in the ichthyol?

From the history and details of ichthyol which I have given in two papers, the one quoted already and a second one[2], we see that ichthyol presents a very complicated composition and that its chief characteristic is its high percentage of sulphur in organic combination.

H. Radcliffe-Crocker[3] says: "It contains a considerable proportion of sulphur, some of which is eliminated by the skin of which I received an unwelcome proof in the case of a lady who after taking ichthyol for some time for an erythematous eruption of the face used a lactate of lead lotion, and almost immediately the sebaceous secretion of each pore was turned black, giving the appearnace of the skin being thickly covered with small comedones. As an internal remedy I have found it useful in reducing some of the hyperæmia in affections of the face, such as in some of the erythemata, lupus erythematosus of the face and acme rosacea. It appears to do this by leading to the contraction of dilated vessels, and sometimes it may do so indirectly by its beneficial effect on catarrh of mucous membranes. Thus while giving it to a lady with lupus erythematosus of the face, she was entirely cured of a severe dysmenorrhœa of twenty years' duration."

With all these facts before us, with our knowledge of the histopathology of psoriasis, of the physiological action of ichthyol we must ask again, why did not somebody think of ichthyol as the rational remedy in psoriasis. Why did not Unna speak of it, who wrote about twenty-eight years ago: "Naturally we should make extensive use of the vasoconstricting effect of the remedy (ichthyol). In all cases which can be traced to want of tone of the muscles of the blood-vessels its internal administration will give gratifying results. Trials would have been the more indicated since it was known from the beginning that patients

[1] Rose, A., Ichthyol Internally—An Historical Sketch, Medical Summary, June, 1912.

[2] Rose, A., Contribution to the History of Ichthyol, Medical Council, Feb., 1913.

[3] Radcliff, Crocker H., Diseases of the Skin, Philadelphia, 1903.

after continued use, sometimes after eight days, feel the general beneficial effect, develop a remarkably good appetite, gain in weight, are complimented by their acquaintances on account of their improved looks. And in all the voluminous literature on ichthyol which I have studied this idea of ichthyol as a remedy for psoriasis was not mentioned.

On September 1, 1913, I saw a lady, twenty years of age, single, who had been suffering from psoriasis for four years. As she informed me the eruptions had first appeared principally on the head but later on had spread all over the body. During the two months previous to her visit to my office she had been taking arsenic, had used chrysarobin salve and had observed the strictest vegetable diet. She was suffering from chronic gastritis with gastralgia, headache and dysmenorrhœa; her weight was 109¼ pounds. On the whole her condition was miserable. The psoriasis eruptions had been limited by means of the chrysarobin salve, but new scales had always appeared on different parts of the body.

My treatment was directed at first to the gastritis and thereby against the general deplorable condition, due probably to the severely strict diet. Patient soon recovered from gastric disorder.

On September 15, 1913, I ordered five-grain ichthyol pills; at first one pill, later on two pills, three times a day.

I allowed her to eat meat and everything she liked and thought would agree with her.

With the use of ichthyol her general condition improved most remarkably. On January 18, 1914, she weighed 115½ pounds. As patient informed me the eruptions had gradually disappeared and when she presented herself at my office on January 18th she was absolutely free from psoriasis and had been so for one or two weeks. *Has had no more dysmenorrhœa.* The last time I saw the patient was on March 24th and at the time she was still free from eruptions.

This is, as far as I am aware, the first case of psoriasis treated with ichthyol which has been described in literature.

[Since publishing this case in a German medical journal[4] my attention was called to a pamphlet: "The Physiology and Therapy of Ichthyol," published in London, 1895, in which the author refers to the treatment of psoriasis by the internal and local use of ichthyol, as reported in a paper by Dr. Cranston Charles, in the Lancet, of September 26, 1891. On looking up the original paper I found that Charles, speaking in this article on ichthyol, mentions one case in which it was given internally: "R. L., aged fifty-two, landed proprietor and retired officer; severe attack of syphilis at the age of thirty-one; general health good. Thick, dry, scaly eruption over the front of both thighs, but extending also downwards along the outer side of the left leg. After the affected parts had been well poulticed, scraped and washed, chrysarobin was applied daily for a fortnight, and arsenic taken internally, without much benefit showing itself; then ichthyol pills were given instead of the arsenic, and ichthyol applied externally, the affected parts being daily well washed, and every night the limbs bandaged in cotton wool soaked in a 20-per cent. solution of the ichthyol, and during the day covered with the ointment (30 per cent. with lanoline) a little mercuric iodide was given at the same time. In ten days the eruption had entirely disappeared and has not returned since (nine months)."

This case, as given by Charles, is complicated on account of the syphilitic element and the antisyphilitic treatment.—A. R.]

It is too soon for a final judgment of the therapeutical value of ichthyol in psoriasis; the fact is, however, that in this case psoriasis disappeared while it was employed internally, a result which had not been obtained, not even temporarily while arsenic was taken and chrysarobin ointment applied.

[4] Rose, A., Ichthyol innerlich gegen Psoriasis, Deutsche med. Presse, April, 1914.

ARTIFICIAL LEUCOCYTOSIS AS A TREATMENT FOR DEMENTIA PRECOX*

By Bayard Holmes, M.D., of Chicago, Ill.

THERE is no more melancholy clinical history than that of dementia precox. The ravages of this disease each year take more than 15,000 youths of high-school age and place them in the 300 asylums for the insane in the continental United States, never to come out again. During the first year of sickness the death rate is high, but later than that little befalls the patient except the risks of custody. Over fifty per cent. die of tuberculosis as a consequence of confinement and the starvation which is incident to their condition. For half a century since the insane have been in the custody of the state the conviction has grown that dementia precox is an absolutely irremediable disease.

In psychiatry all diagnosis is based upon direct observation and opinion. There have been until quite recently no laboratory examinations adequate to distinguish between the sane and the insane, or to determine a diagnosis of any particular insanity. When the Wassermann reaction came into use the small and short-lived group of general paretics was picked out even before the bizarre symptoms showed themselves. This positive method has been, in the last two years, reinforced by the Lange goldsol reaction in which the cerebrospinal fluid is used, as well as the less useful Nonne test. Combining these tests with the new methods of treating syphilis and we find the problems of general

* Chicago Med. Recorder, Jan., 1914.

paresis very greatly illuminated at the present time.

It is scarcely a year since the first light came in on dementia precox. The Abderhalden defense ferment reaction, which was published to the world in May, 1912, was applied successfully by Fauser to the diagnosis of dementia precox and his second report published in February, 1913. Since that time a large number of studies have been made in the hospitals for the insane in Germany and they demonstrate conclusively that the blood of cases of dementia precox peptonizes the "substrat" made from the genital glands and that this is pathognomatic of this disease.

Coincident with this remarkable advance in diagnosis, comes a series of reports of a successful treatment of dementia precox by the production of an artificial hyperleucocytosis. The blood of patients with dementia precox shows a remarkable polycythemia, six to eight million, while at the same time the leucocytes are much below their normal proportion, six to eight thousand. Now it has been noticed by many clinicians that the infectious diseases, such as typhoid, erysipelas and scarlet fever, often improve the mental state of patients with dementia precox and Bruce showed that hyperleucocytosis was a sign of betterment to come. Dide (Lille, 1906) gave a very full account of the experience of the profession with the effect of hyperthermia in these secondary diseases of the insane and was the first to appreciate the relation between hyperthermia and the blood picture on the one hand and physical and mental improvement on the other. Then came a long list of studies of a very superficial sort that attempted general conclusions from a small number of cases continued over a short time. They were for the most part pessimistic and disheartening.

It is a fact that the appearance of Freudianism at this time fascinated the minds of the psychiatrists of Germany and America. They threw away their test tubes and reagents and shut up their laboratories and bath rooms. They wandered in the mystical desert of psychoanalysis and worshiped at the shrine of the Freudian neo-phallicism.

However, there has always been a small remnant left obscurely following rational scientific investigations. They were roused to new activity by the Wassermann reaction and by the appearance of pellagra among the insane. The Nonne and Lange tests have kept up study of reality and displaced for a moment the pursuit of the fatuous.

Halvar Lundval, of Lund, Sweden, published a year ago (Tidske f. Retsmed. c. Psych. X, p. 227) an extensive account of his studies of the blood in dementia precox and also a method of arousing in these patients a leucocytosis and diminishing the polycythemia. In six out of eighteen cases that he had observed for several years this artificial hyperleucocytosis resulted in recovery, in all of the other cases except three in great improvement. The remedy consists of:

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Sodii Cinnamatis Merck	10.00 Gm.
Aquæ Destillatæ	400.00 Cc.

This remedy is given hypodermically after the complete physical examination of the patient and the full blood count. The dose begins at two cubic centimeters. There is usually a chill and following rise of temperature which sometimes continues three or even four days. The leucocytes rise rapidly to 20,000 and the red cells drop toward normal. The katatonia disappears and the patient sleeps in a natural human-like position in bed. Feeding by the tube becomes unnecessary and the patient gains weight. It is necessary to examine the blood to determine when the leucocytes fall below 12,000 and fix the time for the next injection. Improvement is sometimes very rapid and mute, katatonic, filthy patients become communicative, active and tidy before a half dozen doses have been given. The dose must be gradually increased as the patient acquires an immunity and its effect is not as protracted after the remedy has been used several months.

There is no danger of abscess at the site of the injection and it is practically painless. Since the remedy is a saturated solution it should be heated to the boiling point for twenty minutes before it is used, both to redissolve any precipitate and to assure sterilization. After being drawn into the sterile syringe it should be allowed to cool and injected in any safe locality. If the patient is injected at night the sleep is not disturbed, but the secretion of urine is so accelerated that the bladder must be emptied before morning.

The treatment should be carried over several months or even years, since it is only a blood tonic treatment. Lundvall has used a less concentrated solution to which quassin has been added, in order to keep up the reaction.

Julius Donath of Budapesth has used the neucleate of soda alone in very acute cases. He objects very strongly to the

therapeutic nihilism of the keepers of the insane, especially toward dementia precox. He reports in his last communication a large proportion of recoveries by the production of an artificial hyperleucocytosis (Zeitschr. f. d. ges. Neur. u. Psych., 1913, vol. 19, p. 225). Of his fourteen cases two died and four recovered, and the remainder improved.

In a condition so hopeless of spontaneous cure, no treatment offering the slightest promise of betterment should be neglected. More than sixty per cent. of the population of our state insane asylums consist of cases of dementia precox, some of whom do most of the work about the institution. With the Abderhalden reaction to make the diagnosis early and positive and the artificial hyperleucocytosis to "cure" thirty per cent. of the patients, a new era ought to open in our madhouses which will at length win for them through research and cure the right to the name "state hospitals," which they have fraudulently assumed.

THE INTERNAL SECRETIONS AND THEIR LIMITATIONS*

By C. E. de M. Sajous, M.D., LL.D., of Philadelphia

THERE are features of our methods of investigation which, analyzed even by laymen, would evoke not only surprise, but merited criticism. A laboratory worker will perform an experiment or a series of them and, on the few more or less solid facts gleaned therefrom, will erect a theory. This theory may be faulty and fit with none of the data garnered from other directions; the experimenter himself may be untrained technically and scientifically; but it matters not; the man has performed experiments; hence his conclusions are entitled to consideration and are heralded far and wide. A vast aggregate of data furnished by a host of men working on such a plan cannot but lead to confusion and delay in reaching sound knowledge on any question. This applies particularly to the work being done on the ductless glands. Let us compare this plan with that of an investigator who, less pretentious as to his own technical abilities (on every branch of experimental knowledge, if you please), bases his conclusions on a broad survey of the scientific field of normal and morbid biology, *i. e.*, embryology, zoology, cytology, physiology, anatomy, histology, chemistry, clinical medicine, pathology, pharmacology, etc., and who selects only those experiments, clinical observations, etc., hundreds perhaps, by men of special competence in those branches, to arrive at a conclusion. Will this man, whose work is co-ordinated and systematic, who insists on perfect accord of *all* his conclusions, those on one ductless gland fitting perfectly with those on all other glands, not be more likely to approximate the truth? While the first man will base his conclusion on, say, ten personal experiments, the second man will base his on, say, five hundred experiments performed by experts. Does this in itself not suggest greater precison on any question—as far as available knowledge will permit?

The latter plan is the one I adopted many years ago when my work on the Internal Secretions was projected. No one today, endowed with the least degree of fairness, can deny that steadily, as the experimental work on the ductless glands has progressed, my views have in many respects been confirmed. This must serve as my apology for the introduction, in the following remarks, of my own deductions.

The literature on the internal secretions nowadays is so confusing, owing to the total lack of co-ordination in the work carried on, that it is difficult to obtain any clear idea of the functions of any ductless gland. It has seemed to me, therefore, that a summary of these functions might prove interesting to you. You may be laboring, however, under the impression that, giving special attention to these organs, I am a rabid advocate of the idea, introduced by Brown-Séquard, that all organs produce an internal secretion. I would ask to be considered in precisely the opposite light, *i. e.*, as most conservative. Very few glands, from my viewpoint, produce an internal secretion in the sense that their product has a *specific* influence on the functions of all other organs as true hormones, *i. e.*, on the body at large. To endow with an internal secretion so many structures as is at present done undoubtedly serves greatly to obscure the whole problem and to hamper progress. It is because of this that the title of this paper refers to the limitations of the subject. Indeed, I will begin with the series of organs which do not appear to me judging from the evidence available, to produce internal secretions.

ORGANS HAVING NO INTERNAL SECRETION.

Pituitary Body.—This structure not many years ago was classed among the vestigial organs, but its functional importance asserted itself when Marie showed its intimate causal relation to the disease

*Read before the Alpha Mu Pi Omega Medical Fraternity, Monthly Cyclopedia, April, 1914.

he termed acromegaly. Evidently it had some powerful influence over general nutrition. Gigantism was also associated with it, lesions of the pituitary being discernible in practically every instance. How does it exercise its influence?

The prevailing view at the present time is that it produces an internal secretion. It is composed of two parts: (1) a glandular or spongy portion composing the anterior lobe, and (2) a nervous portion, the posterior lobe, which includes a layer, the pars intermedia, that separates it from, but is in juxtaposition with, the anterior lobe. It is this pars intermedia which is said to produce the secretion that extracts of the posterior lobe, or the active material obtained from it, are supposed to represent. Now the weakness of the hypothesis is shown by the fact that the only glandular portion of the organ, the anterior lobe, the structure of which would suggest a secreting gland, produces extracts which are inert, as shown by Howell, while the structure which produces active extracts is a nervous organ presenting no secretory characteristics and connected directly with the brain. The colloid masses supposed by Herring, Cushing, and others to be secretory products are present in the inert anterior lobe, but not in the active posterior lobe, according to Grünbaum. Indeed, there is ground for the belief, to which Halsted has recently added testimony, that the colloid found in large quantities in relatively inactive thyroids is an inert substance and not a secretion at all, its presence in the inert anterior lobe being additional proof of this fact. On the whole, we can certainly state with Swale Vincent that "it is extremely difficult to imagine how such a structure can be regarded as a secreting gland."

I have long held that the pituitary body is not a secreting gland. It serves, from my viewpoint, to co-ordinate two important though correlated functions: The first of these is to protect the body against disease and poisoning. The first part of the mechanism is the anterior lobe, a contractile organ through which the circulating blood passes, and in which the contents of the blood-cells, white and red, are in part evacuated. The cellular fluids and the plasma form a substance, the colloid, which passes through a vacuole between the anterior lobe and the pars intermedia of the posterior lobe and out through the lymphatics, their elimination being assisted by periodical contractions of the organ similar to those of the spleen, in which blood-cells are also broken up. On its way out, however, the colloid residuum comes into contact with the pars intermedia, which contains nerve cells resembling certain cells found in the olfactory area of the nasal cavities. I regard this portion of the pars intermedia as an important sensory organ having for its purpose to *test* the blood for any poison it may contain, just as the nasal olfactory area can test and detect unpleasant and often harmful emanations in the air. The sensory organ in the pars intermedia I regard as the homologue of the osphradium or test-organ found in lower forms, which has for its purpose to protect them by testing their respiratory fluid, sea water, represented in us by our blood. In the higher forms, including man, the protective impulses are transmitted from the sensory or test organ in the pars intermedia by way of the adjoining nerve cells in the posterior or neural lobe, up the infundibulum, along the base of the brain, the medulla oblongata, and cord, and thence through the sympathetic to the thyroid apparatus, adrenals, and kidneys. When a poison or toxin capable of exciting the test-organ (for some poisons depress it) occurs in the blood, therefore, the thyroid and adrenals increase their output so as to increase the antitoxic power of the blood at large, while the kidneys are stimulated to excrete with abnormal vigor the poison itself or the end-products into which it has been converted.

Have we any evidence of such a function in man? I might quote in this connection the observations of a believer in the secretion theory—an antagonist therefore—in reference to the after-effects of surgical removal of the pituitary body for tumor of this organ. "I wish to call attention," writes this observer, J. A. Flexner, of Louisville, "to the extreme susceptibility of these patients to morphine and to autointoxication, especially of purin origin." In referring to a personal fatal case, he states that "one twenty-fourth of a grain of heroin kept her narcotized for over a day," and he concludes that the "sudden and unexpected end was due to stopping of her glandular feedings and to the severe autointoxication which resulted from her careless dietary." Considered from my viewpoint, the woman, by losing her pituitary, had lost her power to oppose actively certain poisons, even those derived from foods.

Yet, the death is partly attributed to the absence of glandular feedings, meaning thereby the internal use of pituitary gland. There is no doubt of this, but, as noted by many physiologists—Howell, Schäfer, and others—extracts of the posterior pituitary

and the gland itself cause effects, both general and toxic, which are identical with those of adrenal extracts. That in the posterior lobe the adrenal principle is present, though in close organic combination with other substances, is shown by the fact that when one applies the chromaffin test a marked positive reaction is obtained (Wiesel). This shows that the organ forms part of the chromaffin system, *i. e.*, of that system composed of adrenal tissue and sympathetic ganglia and nerves. The giving of pituitary gland to the patient helped her, therefore, because she received through it a part of the aid she would have obtained had her pituitary and its test organ been present to stimulate her adrenals.

This introduces the second function I attribute to the pituitary body, that is, to its neural lobe. Its connection with the chromaffin system stamps it as a sympathetic ganglion. I have long held that it is the chief ganglion of the sympathetic and chromaffin system, and that its nervous elements are highly differentiated cells, the axons of which follow the path outlined above, to become connected with the sympathetic system at large. But it will take many years, doubtless, even if my views prove to be sound, to develop fully the functions of the pituitary as I interpret them. It brings in features which themselves have not as yet been sufficiently fathomed to permit fundamental conclusions necessary to the mechanism as a whole. Yet, when we realize that not many decades have elapsed since sympathetic fibers were regarded as connective-tissue fibers, there is some hope that even the test organ will have its day.

Pineal.—This organ has had a varied career. Descartes thought it contained the soul; its connection with the pineal eye of reptilia and other low vertebrates caused it to be classed with the vestigial organs—a convenient waste basket for structures the functions of which are unknown. Like the pituitary body, also classed formerly as a "vestigial organ," it has been raised to the rank of a useful organ. It contains neuroglia and what are regarded as secretory cells. Certain of its follicles contain what is termed "brain sand," also found in the choroid plexus and elsewhere, but devoid, as far as is known, of physiologic importance. As to the functions of the pineal, it is thought in some way, perhaps through a secretion, to control growth in the young. Destructive tumors of the pineal in children under the seventh year may cause them to become abnormally tall and prematurely developed as to their genital organs, hair growth, and ossification. Obesity is occasionally observed in these cases. Yet the pineal does not seem to influence metabolism, judging from the results of removal. Notwithstanding this, the feeding of pineal gland to young animals by Dana, Berkeley, Goddard, and Cornell caused them to outgrow the controls rapidly in activity, size, intelligence, and resistance to intercurrent disease, while in children it appeared to benefit certain cases of retarded development, though not cases of total idiocy and gross physical defect.

From my viewpoint, although future labors may modify this attitude, the pineal does not possess the attributes of a secreting organ, the effects obtained with its extracts being accounted for through the fact that the large granular nuclei it contains in abundance are very rich in nucleins. It appears to me as being more of the nature of a nervous organ capable of influencing directly or indirectly the peripheral circulation and particularly that of certain organs, the genitalia and skin especially, during development.

Thymus.—There is no ground, in my opinion, for the belief that this organ is the source of an internal secretion. Its structure resembles greatly that of lymph-glands, the tonsils, etc., and is rich in leucocytes and large concentric corpuscles, known as Hassall bodies, the special functions of which have not been established. Other structures resembling the latter and known as myoid cells, owing to the resemblance of their elements to rudimentary muscle fibers, are also to be found. Although the organ is necessary to development, disappearing in most instances only at about the sixteenth year, its removal in the young does not necessarily prove fatal. While in certain animals, the guinea-pig, for example, the operation does not influence development, in others, puppies or young dogs, for instance, it causes anemia and leucopenia, with deficient nutrition, very marked cardiac dilatation, and death within a year. The series of events, as observed by Klose and Vogt, includes a period of obesity which lasts two or three months and one of idiocy lasting until death. The bones are then found to be atrophic, dwarf-like, and deficient in undissolved calcium. The fact that removal of the thymus in hens causes them to lay eggs without shells emphasizes the influence of the thymus upon calcium metabolism.

The stage of idiocy observed in dogs after removal of the organ recalls the

autopsies of eighty-nine children recorded by Katz and Bourneville. Of these, twenty-five had been mentally weak or epileptic; without exception these cases showed absence of the thymus, while the organ was normal in all other children.

These data, coupled with the facts that the thymus contains a nucleoproteid which is very rich in phosphorus (3.5 per cent.), and that these nucleoproteids and nucleins are the most prominent constituents of the protoplasm of all cells, and, as stated by Oliver and Schäfer, "the most probable antecedents of the internal secretions," led me to conclude in 1903 that "the thymus is the main organ upon which the osseous, cerebrospinal, and nervous systems depend for their phosphorus during their development." It is a temporary storehouse, in other words, from which the tissue-building leucocytes gather the elements out of which the nuclei of tissue cells are formed. Nothing has been published since that has weakened my opinion that the thymus does not produce a true internal secretion.

Liver.—The prevailing view is—justly, in my opinion—that the glycogenic function of the liver does not belong to the category of an internal secretion. Urea has been termed by Biedl a "negative internal secretion," owing to its relative harmlessness, and because it is believed to excite the kidneys. When, however, we trace urea to its origin and realize that it is an end-product of toxic substance, protein wastes, ammonia compounds, etc., subjected to the antitoxic action of the liver, we can hardly consider it otherwise than as an excretory product.

ORGANS HAVING AUTONOMOUS INTERNAL SECRETIONS.

The second series of organs to which I shall refer are those which, from my viewpoint, do not produce an internal secretion possessed of a specific action throughout the body, but are intended only to influence those structures which form part of the mechanism to which the secreting organ belongs—the ovary, for instance, in its relations to genital apparatus. This class might be termed *autonomous* internal secretions, to identify them from those which affect the body at large, the true hormones, as defined by Starling, who wrote recently: "By the term 'hormone' I understand any substance normally produced in the cells of some part of the body, and carried by the blood-stream to distant parts, which it affects for the good of the organism as a whole. The hormones are thus the chemical means of correlation of the activities of different parts of the body."

Testes.—Although the testes are thought to produce an internal secretion, orchitic extracts are known to owe their beneficial effects to nucleo-albumins, substances that are rich in phosphorus. The fact that beneficial effects have also been noted in obesity, eczema, psoriasis, and other disorders in which either thyroid or adrenal gland is of distinct value suggests that both of these substances are present in testicular preparations, besides the phosphorus-laden nuclear products to which their main therapeutic value is ascribed.

The presence of the adrenal principle reveals itself when the identity of the one testicular product which has given the best therapeutic results is inquired into. This product, known as spermin—isolated by Poehl—has given better results than the ordinary orchitic preparations, and in the same disorders. It is probably produced by adrenal rests in the testes similar to those in the kidney. When considered in the light of the functions I attribute to the adrenal secretion, spermin resembles it very closely. It is an oxidizing body which acts catalytically; it gives the guaiac and Florence's hemin test, thus showing that it is a constituent of hemoglobin; it is unaltered by boiling, and presents other characteristics of the adrenal principle. That it is a ubiquitous constituent of the organism at large is further shown by the fact that it is found in the blood of females as well as in that of males. Brown-Séquard, in fact, found testicular extracts as efficient therapeutically in women as in men.

My own belief is that the testes do not produce a true internal secretion, but that they restore to the blood substances which they borrow therefrom to build up, with the product of their adrenal rests, their autonomous secretion. All these substances contribute also to the formation, in appropriate structures, of semen—both fluid and spermatozoa, the latter, as is well known, being rich in nucleins. The substances returned to the body at large include, therefore, besides what portion of the autonomous internal secretion the organs of the genital system have not utilized, the unused reserve of materials created for the process of copulation which nature, never wasteful, turns to good account, particularly during growth, *i. e.*, during the presexual period of life. This view, which is here advanced for the first time, seems to me to elucidate many obscure questions. The debility, languor, mental torpor, and deficient growth noted in boys who indulge in excessive venery

or masturbation is accounted for, while it explains the effects of castration. As is well known, this operation, when performed before the age of puberty, prevents the growth of hair, arrests the development of the thorax, pelvis, and larynx, the voice remaining childish—all phenomena which are precisely the converse of those caused by an excess of adrenal secretion, as we shall see—and the prostate and vesiculæ seminales failing to develop. Briefly, and even though the long bones grow inordinately though imperfectly, owing to disturbances in calcium metabolism, these subjects remain infantile, because of their total deprivation of the testicular product, which during development should have been entirely utilized by the organism at large.

Ovaries and Corpora Lutea.—There is considerable analogy between the characteristic effects of castration in the male and those following removal of the ovaries in young females. What remains of the genital organs, the uterus, vagina, and vulva, and also the breasts, retain their infantile type. In developed females there is a tendency to atrophy of the same structures and to obesity (also observed in men after castration), menstruation meanwhile ceasing. The influence of the ovaries on metabolism also corresponds with that of the testicles. The dictum of Brown-Séquard—to whose remarkable physical improvement under the influence of testicular extract I can bear witness—that this agent is more efficient than ovarian extract in the treatment of women, suggests a kinship between these two organic substances. This is emphasized when the pharmacologic action of ovarian extract is considered. Precisely as does spermin, it awakens all the characteristic effects of epinephrin: it raises the blood-pressure, slows the heart, and raises arterial tension, while in castrated animals it enhances oxidation. That it influences general metabolism is shown by the fact that ovarian extract increases the excretion of urea and phosphoric acid. As stated by Mulon (1904), in fact, the corpus luteum presents all the morphologic characteristics of an aggregate of chromaffin cells, to which class the cells of the adrenal medulla also belong.

Here again, it seems to me, we are not dealing with a true internal secretion, as regards a fixed function in the organism at large. As far as available evidence permits us to judge, the ovary produces a secretion which sustains metabolism and nutrition of the *sexual apparatus*, of which the ovaries, the secreting organs, themselves form part, and also of the menstrual function. During the intervals—only from my viewpoint, please remember—the unused excess is absorbed into the general circulation, not as a special secretion or hormone, but as a part of the general asset in adrenal and thyroid secretions, nucleins, etc., with which the functions of the general organism are usually carried on. When the ovaries are removed or when menopause occurs, the organism is deprived of two of the structures which contribute to the general welfare certain substances, among which the epinephrin-like principle, and possibly nucleins, may perhaps with some degree of certainty be mentioned. I need but recall the effects of oöphorectomy and the menopause to emphasize the phenomena that attend the loss of the ovarian function.

After ovulation, which occurs during menstruation, the corpus luteum is formed. This organ is also credited with an internal secretion; but the latter acts also within the reproductive system, its purposes being, according to prevailing views, to augment markedly the nutrition of the uterus and assist in the fixation of the embryo. It seems also to insure the development of the mammary glands after conception has occurred, and to continue to do so during the earlier months of pregnancy. But as the mammary glands form part of the reproductive system, this action does not warrant the inclusion of the ovary among the true ductless glands.

Kidneys.—The belief that the kidneys are the source of an internal secretion does not rest on solid data. The renal veins do not seem to contain any sort of active agent. The renal extracts produce a rise of blood-pressure so suggestive of that of the adrenal secretion that various authors have called attention to it. Bingel and Strauss note besides that "the action of rennin, like that of epinephrin, is exerted in the muscles of the peripheral vessels." Like epinephrin, it produces dilatation of the pupil. These effects are readily explained, however, by the fact that the renal tissues contain adrenal rests, those islets of adrenal tissue from which renal hypernephroma is well known to develop. On the whole, it is possible that these adrenal rests are themselves the source of an adrenal secretion—in organic combination perhaps—and that this secretion may serve to sustain metabolism in the gland itself; but the existence of a true renal internal secretion, of value to the organism at large, is extremely doubtful.

ORGANS WHICH PRODUCE AN INTERNAL SECRETION.

Thyroid.—But fifteen years ago, about

all that could be said confidently of the thyroid gland was that it yielded a secretion which subserved a useful purpose in the body and that the effects observed after removal of the organ were probably due to loss of this function. It had been suggested that the gland also destroyed waste products, but the evidence was deemed insufficient (Schäfer, 1898). Today, through the labors of many investigators, we have learned not only that the thyroid and parathyroids deeply influence general metabolism and the process of growth, but that they take an active part in defending the body against infections and other toxemias. As Vincent expresses it, "the extreme liability of thyroidectomized animals to various infective conditions is strong evidence in support of the view." This connection of the thyroid with the general process of immunity, in contradistinction from a specific action on wastes, I had pointed out in 1903, before, I believe, any other writer, both metabolism and the protective function being carried on in conjunction with the secretion of the adrenals. Later, in 1907, I submitted evidence which had led me to conclude that the thyroid and parathyroid secretions constituted the substance which Wright had termed opsonin, pointing out, however, that this substance sensitized not only bacteria, toxins, etc., but also tissue elements, wastes, fats, etc., to facilitate catabolism—a function in which also ferments, as more recently held by Abderhalden, took part. All the more salient features of my conclusions were subsequently sustained experimentally by others. A functional connection between the thyroid and the adrenals was found actually to exist by Kraus and Friedenthal, Kostlivy, and Hoskins; a direct connection between the thyroid and the production of opsonins has been established by Fassin, Marbé, and others.

Summarizing the functions of the thyroid and parathyroids, it may now safely be said that their secretions are essential to the metabolism and development of the body, while taking part in the processes which protect it against infections and intoxications.

Adrenals.—As is well known, the adrenal secretion, represented by its active principle, epinephrin, raises the blood-pressure and increases the power of the cardiac contractions, while slowing the heart, as shown by Oliver and Schäfer in 1894. A couple of years earlier Abelous and Langlois had urged that the secretion of the adrenals destroyed certain products of muscular metabolism. It has been established also that the adrenal secretion sustains the tone of the sympathetic system, and through it the cardiac and vascular muscles and circulation. Through this action it governs the vascular supply of all vegetative organs, *i. e.*, those concerned with growth and nutrition. Moreover, as more recently shown, it governs the sugar content of the blood, thus influencing carbohydrate metabolism, so important to muscular activity. These functions may be said to have received general acceptance.

As to the views which are still *sub judice*, I may recall that, beginning with 1903, I submitted that the adrenals carried on functions of greater importance than those just mentioned. By pointing out that the adrenal secretion was the key to tissue respiration, the previously unidentified "oxidation ferment" of Schmiedeberg, Jaquet, and others, the manner in which it caused vascular contraction and thereby regulated the blood supplied to the various organs was explained, each organ being studied in turn. The glycogenic function of the liver was also gone over, and the relations between the adrenal secretion, glycogen, and muscular tissue I held at the time differ little from the views since advanced. In addition to these functions, I urged that the adrenals co-operate with the thyroid secretions and other substances to destroy not merely, as believed by Abelous and Langlois, toxic products of muscular metabolism, but also toxins and poisons of all kinds that are capable of acting as antigen, the adrenal secretion itself being an antibody. These views still await development and final experimental proof, but there is no doubt in my mind that the adrenal secretion will be proven to take an active part in oxidation and general metabolism. For the time being, however, we can only assert that it sustains and perhaps of the skeletal muscles, and that it influences carbohydrate metabolism.

Stomach.—The secretion of gastric juice of psychic origin, that is, produced by the sight of luscious food in man, of meat by a hungry dog, etc., is totally prevented by division of both vagi. The influence of these nerves is further shown by the fact that, when the peripheral cut end of one of these vagi is stimulated, gastric juice is secreted. While the importance of the nervous mechanism of the stomach in the process may be emphasized, this is evidently not the only resource, for it has been shown that after the stomach has been wholly

disconnected from the nervous system in an animal its functions are not materially impaired. This is due to the fact that the mucous membrane of the stomach contains an internal secretion, which in turn excites the gastric mucous membrane to to secrete. The internal secretion referred to is not, however, obtainable from the fundus; it is specific to the pylorus.

Most authors state that this secretion is not a ferment, because it is not destroyed by boiling, but from my viewpoint this conclusion is not warranted. There is an oxidizing ferment in the gastric juice—and derived from the blood—which I have termed adrenoxidase, that is not destroyed by boiling a certain length of time. Be this as it may, the fact remains that we are justified in stating that the pylorus produces an internal secretion or gastric hormone which, carried through the blood to the gastric glands, excites them and causes them to secrete gastric juice.

Intestine.—Claude Bernard showed long ago that the passage of food into the duodenum provoked a flow of pancreatic juice into the intestine, but this was first ascribed to a nervous reflex. Popielski, Wertheimer, and LePage discovered, however, that this occured when all nerves were cut upon introducing acid into the small intestine almost anywhere excepting within a couple of feet of its termination. Bayliss and Starling then ascertained that the acid did not directly influence the pancreas through the intestinal mucous membrane, but that it caused the latter to secrete a substance which, on being carried through the blood to the pancreas, excited the latter to secretory activity. The substance secreted by the intestinal mucosa proved to be an internal secretion, which they termed "secretin." Since then, secretin has been obtained from parts of the intestine other than the duodenum, and from the stomach.

Although the organs of the digestive system, in so far as the gastric and intestinal hormones are concerned, might be included among the autonomous internal secretions owing to their apparent functional restriction to the stomach and intestines, there is some ground for the belief that even they will eventually be shown to participate in the general functions of the body, as I urged in 1907. This is emphasized by the recent labors of Abderhalden.

Pancreas.—Removal of the pancreas in animals gives rise to diabetes. We should expect that ligation of the duct of Wirsung would produce the same effect, since it is through this duct that the pancreatic secretion reaches the intestine. Yet ligation of the duct is not followed by the disease. It is evident, therefore, that it is through some other factor which is suppressed by removal of the organ that it is caused. What is this factor? The bulk of evidence indicates that, as first pointed out by Lépine in 1889, an internal secretion is produced by the pancreas in addition to that which finds its way into the intestine through Wirsung's duct, and that it is the absence of this internal secretion which in the operated animals causes diabetes.

The source of the pancreatic internal secretion is still a moot point, but the preponderating view is that the islets of Langerhans—structures which vary in number according to the degree of nutrition to which the body is subjected, inanition, *e. g.*, causing them to increase greatly in number—produce it, and, moreover, that they sustain carbohydrate metabolism. Hence inhibition of the functions of these islets through sclerosis, hyaline degeneration, etc., whether the rest of the pancreas be involved or not, as shown by a large number of autopsies, gives rise to diabetes precisely as is the case when the organ is removed.

How does the pancreas sustain carbohydrate metabolism? Does it influence the formation of glycogen or its conversion into glucose; or, again, does it influence the metabolism of sugar in the tissues? If we restrict ourselves to inhibition of the pancreatic function as a cause of diabetes, a hopeless confusion soon occurs. Indeed, there exists a diabetes due to the opposite condition, *i. e.*, excessive activity of the islets of Langerhans, for we know that epinephrin, thyroid gland, pituitary gland, and splenic extract, administered in suitable quantities, and likewise pregnancy, in which the ductless glands are overactive, all cause glycosuria. It is reasonable to suppose, therefore, that various ductless glands influence the islets through their hormones or secretions, and that it is *because* they sustain carbohydrate metabolism that, in excess, they produce glycosuria. This led me to suggest, long ago, that we should divide our cases of diabetes into two classes: the *asthenic* cases, constituting the majority, those in which the pancreas was functionally deficient, either through local lesions or through paucity of the agencies, hormones, etc., which activate the pancreatic cells; and the *sthenic* cases, those in which, either through an excessive

production of these hormones, as in infectious diseases, excessive irritability, emotional stresses, local inflammation, etc., the pancreas was overactive. Be this as it may, the fact remains that the participation of various ductless glands in carbohydrate metabolism is now generally recognized. When, therefore, we speak of the pancreas as sustaining carbohydrate metabolism, we must in all likelihood consider the organ as one only of the structures participating in the process.

It may prove of advantage to call the attention of those of you who may wish to do laboratory work in this connection to what, from my viewpoint, is an experimental error which is retarding progress by suggesting false theories. Certain experimenters have reported that epinephrin could inhibit the functions of the pancreas, but an error lies in the fact that they used doses above the proportion of epinephrin ever present in the blood, and, therefore, produced sufficient contraction of the arterioles to the pancreas to reduce greatly the arterial blood supplied to this organ. As function in any organ is dependent upon the proportion of arterial blood it receives, they erroneously concluded that the epinephrin could inhibit the production of pancreatic secretion.

The manner in which the pancreatic internal secretion is influenced by other ductless glands in the production of glycosuria—diabetes being ascribed to panceratic lesions—has remained obscure. In 1903–1907 I offered an explanation which is gaining ground in so far as the experimental work on the subject is concerned. This explanation was that both the adrenals and thyroid, when overactive, can produce glycosuria by increasing, through their secretions, oxidation and metabolism in the pancreas, which they reach through the blood. The pancreas being thus caused to produce an excess of amylopsin, which in turn acts on the hepatic glycogen, sugar is formed beyond the needs of the tissues at large and the surplus of sugar is eliminated with the urine. This is the *sthenic* form previously referred to. In the *asthenic* form adrenals and thyroid are insufficient, and, metabolism in the pancreas being correspondingly impaired, alimentary glycosuria occurs precisely as it does after removal of, or degenerative lesions in, the pancreas. The glycosuria of infectious diseases, from this viewpoint, would be due to excessive oxidation—incident upon the febrile process—in the pancreas, in addition perhaps to that of the tissue glucose in the body at large.

Leucocytes.—Another function of the pancreas, suggested by myself in 1903–1907 (see pp. 668 to 745, Vol. I, in the first four editions, and pp. 885 to 907, Vol. II, in the first six editions of "Internal Secretions and the Principles of Medicine"), was that the pancreatic ferments, through the intermediary of certain leucocytes, take part in the nutritional functions of tissue cells. The more recent labors of Abderhalden indicate that he has reached a similar conclusion in so far as the participation of leucocytic ferments in cellular metabolism is concerned. His labors have received prominence recently, especially through his pregnancy test. Abderhalden holds that each cell, including the leucocytes, absorbs nutritive substances, submits them to digestion by means of enzymes it contains, and uses the end-product as material to replace its own materials as fast as they are being used up. Even though the cells of the different organs differ in structure according to their functions, they are all supplied with their nutritive pabula in the same way. As Abderhalden has done since, I also attributed to ferments, both in the tissues and in the blood, the auto-protective phenomena that take place therein, and that are brought into activity when certain poisons, toxins, etc., occur in the blood.

THE INTERNAL SECRETIONS IN THERAPEUTICS.

The subdivision of the organs reviewed into inactive, autonomously active, and active glands may serve to elucidate the therapeutic action of either division of these organs. The specificity of the cells constituting an organ (as differentiated from that of the cells of any other organ) suggests that when this organ is employed therapeutically we should obtain its specific *general* effects only when using *true* ductless glands, *e. g.*, the thyroid or adrenals. In the case of the autonomous glands, the specific effects would affect only the organs of the system, *e. g.*, that of reproduction, under the influence of the autonomous gland of that system. The action of these autonomous secretions on the body at large, though due to by-effects, would be of major importance, however, in that they would be necessary to the physiologic dynamism of all cells by contributing substances normally utilized in the physiologic upkeep of all tissues. As regards the glands deprived of a true internal secretion, their action would be that of their chemical constituents, those of the posterior pituitary, for example. The nucleins

of the thymus, however, would contribute to the actual physiologic needs of the body up to puberty, disappearance of the organ coinciding with completed development. All this coincides with the teachings of clinical experience, and seems to raise the whole subject out of the field of empiricism.

There is a vast opportunity for fruitful development in this direction—a bewildering one indeed in its possibilities. And this may be said of the entire subject of the ductless glands. When we know all their relations with metabolism and with the autodefensive resources of the body, a great stride will have been made in our strife against disease.

ALCOHOL INJECTIONS IN TUBERCULOSIS OF THE LARYNX*

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THIS report covers all the cases in which injection of the superior laryngeal nerve with alcohol was resorted to during a period of eleven months of sanatorium practice. The cases were not selected because of the manifestation of any definite and similar pathological lesions, and the report admirably illustrates the practicability of this form of treatment. In most of the cases the injection was resorted to for the purpose of relieving the pain, although the attendant salutary effect of increasing the ease with which food could be taken was so marked that it must rank with the former in importance.

Boulay[1] has called attention to this form of anesthesia for the performance of intralaryngeal operations, such as cauterization.

In 1909, Hofman, of Munich, reported sixteen cases in which he had injected the superior laryngeal nerve and in which the anesthesia lasted from six to twenty days. Alexandre[2] has described three cases of extremely painful involvement of the larynx in tuberculosis where his injection caused complete relief of pain, lasting in one case for a period of two months. Mithoefer[3] has called attention to the fact that it is chiefly in the form of disease with great involvement of the superior orifice of the larynx—the aryteno-epiglottic type—that alcohol injections have been found of great service. Involvements of the external surface of the epiglottis, however, will not be relieved by such injection, since this portion is innervated by the glossopharyngeus, while the internal surface is innervated by the superior laryngeal nerve, coming from the vagus. In extensive involvements of the epiglottis, amputation is advised.

The technique of the operation is simple, and is as follows: Place the patient in a horizontal position. The left side of the larynx is grasped with the first and second fingers of the right hand and with the thumb of the same hand the painful spot is located. As soon as this spot is found, the thumb-nail is pressed in to mark the spot and the needle is introduced at this point. This painful spot is the point where the internal branch of the superior laryngeal nerve pierces the thyrohyoid membrane. It is situated at about the middle point of the superior border of the thyroid cartilage. The needle is introduced perpendicularly to the surface of the skin for a distance of 1.5 Cm., which distance has been marked off on the needle. According to the thinness of the subcutaneous layer of fat the perforation has to be more or less deep. The point of the needle is now moved carefully in all directions until a sharp pain radiating to the ear is felt. Sufficient warm eighty-five per cent. alcohol is slowly injected until the pain in the ear disappears. During the operation the patient has to avoid both speaking and swallowing. The needle is then withdrawn and the process is repeated on the other side. No local anesthetic is required. A few minutes after the operation the patients complain of very little discomfort. In case the nerve has not been reached the discomfort is increased, but the pain on swallowing is markedly diminished.

Case 1.—Mrs. W. Late third stage case. Complained of continuous racking pain in throat which was so intense that she had refused nourishment for several days. Laryngeal examination revealed ulceration and erosion of entire right half of epiglottis, deep ulceration of cords and arytenoids. Both superior laryngeal nerves were injected, and after twenty-four hours patient took first meal. Still complained of some pain on swallowing which was relieved by orthoform applications on epiglottis. The pain in larynx was completely relieved within forty-eight hours. Ten days later patient began to have pains in larynx which became severe at end of five days. Reinjected on seventeenth day. Complete anesthesia lasting until death of patient on twenty-ninth day.

Case 2.—Miss G. Late third stage case. Complained of dysphagia and pain in throat of two months' duration. Laryngeal examination revealed epiglottis clear, slight ulceration at cord. Infiltration of arytenoids. Injected both superior laryngeal nerves with complete relief of symptoms. Anesthesia lasted twenty-one days, until death.

Case 3.—W. Late third stage case. Complained of severe pain in throat; dysphagia. Aphonic. Laryngeal examination revealed epiglottis clear, extensive and deep ulceration of cords and arytenoids. Injected both superior

*Interstate Med. Jour., April, 1914.

laryngeal nerves three times, the anesthesia lasting fourteen, nineteen, and twenty-four days.

Case 4.—Early third stage case. Complained of pain in throat, dysphagia, and pain in neck. Laryngeal examination revealed thickening of epiglottis, extensive ulceration of cords and arytenoids. Was injected four times at intervals of twenty-four, thirty-three, and forty-two days. Partial relief of dysphagia and pain in throat. Pain in neck unaffected. Supposed involvement of lower larynx and upper trachea.

Case 5.—G. Late third stage case. Complained of severe pain in throat. Aphonic. Laryngeal examination revealed marked thickening of epiglottis; view of larynx obstructed. Injected both nerves twice. The first injection partially relieved the pain; five days later reinjected, complete anesthesia lasting nineteen days.

The ease with which this form of treatment is employed, and the marked relief which it affords in suitable cases, renders it one of the most gratifying agents at our command to relieve the pain of the tuberculous.

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PICRIC ACID AS AN AID IN THE TREATMENT OF VARIOUS SKIN LESIONS*

By Herbert B. Wilcox, M.D., of New York City

Picric acid first came to be applied surgically through its action as a coagulant of albumin. This characteristic of the drug was noticed in the process of tanning skins, and later on was applied to the preservation of microscopic sections.

A search of the literature on the subject shows that the drug has formerly been extensively used, but of recent years less frequently employed. In 1876 Cheron reported that picric acid encouraged the cicatrization of wounds, arrested fermentation and dried up morbid secretions. Fifteen years later Thiery presented an excellent report on the results of picric acid in saturated solution, in the treatment of ulcers, granulating wounds, excoriations, a variety of skin diseases, urethritis and in particular in the treatment of burns. This work, with that of Grange, placed picric acid in the dermatologist's formulary. It then began to be used largely in the treatment of eczema. Carelli and Cerassi also found the drug useful in eczema, erythema, artificial dermatitis, impetigo and erysipelas. The striking results obtained in two cases of severe burns, to be later reported in detail, suggested the use of the drug in a variety of skin conditions with results that seem worthy of attention.

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Picric acid is a tri-nitro-phenol, discovered by Haussman in 1788, and demonstrated by Laurent in 1841 to be a phenol derivative made by dissolving phenol crystals in sulphuric acid, and then adding nitric acid. It is soluble in alcohol to 10 per cent.; 20 per cent. in ether; 1.2 per cent. in water. Its absorption by the body, in amounts likely to result upon the ordinary usage of the drug, even over large areas, does not result in permanent damage. If absorbed abundantly by the skin and alimentary tract, there is produced a bright yellow staining of the skin, mucous membranes and urine. Prolonged absorption may result in parenchymatous inflammation of all the body organs with disintegration of the red blood cells. Erb found that eight grains administered internally caused severe gastroenteritis and prostration in the rabbit.

There is no simple quantitative urinary test for this drug. The degree of absorption may be with some accuracy determined by noting the amount of stain by the urine on cotton which has been dipped in it.

In testing picric acid against bacillus pyocyaneus and staphylococcus aureus, Ahrenfried demonstrated that 1 per cent. picric acid has fifty times the bactericidal power of a 1 per cent. carbolic acid solution. A year's experience on Dr. L. E. La Fétra's service and the out-patient department of Bellevue hospital, in the treatment of burns, psoriasis, impetigo, acute and chronic eczema, ringworm, erysipelas, intertrigo and accidental skin excoriations, by picric acid, has shown it to be a very useful drug. Among the striking effects are the prompt relief of itching, stinging and pain—that is the anesthetic effect of the preparation; its antiseptic action in rapidly cleaning up superficial infections; its coagulating, protective action on the skin—in this way obviating maceration of the parts about the lesion and generally increasing the skin's resistance; and its easy application, which may be in aqueous or alcoholic solution, painted on, by wet dressing, or by ointment.

In the use of picric acid solutions for the sterilization of operative areas it was found (O. W. Mitchell) that a liquid solution will pass through rubber tissue in a very short time. Other experiments upon the osmotic action of picric acid solutions showed that it easily penetrated mesenteric membrane, skin and muscle tissue, and retained its germicidal activity after such passage. This evidence of the penetrating qualities of the drug raised the hope of some success with its use in erysipelas.

Schamberg and Coleman report their

results in the treatment of vaccination wounds with picric acid. They conclude that its use in no way interferes with the specific action of the vaccine; that if constitutional symptoms were likely to ensue upon vaccination these were lessened or avoided when picric acid was used; that the local reactions were of much reduced intensity; and that the course of the proceeding was materially shortened.

Eczema.—Better results were obtained in the acute than in the chronic eczemas; most striking was the improvement seen in the facial cases having profuse exudation, excoriation and crusting. In the milder cases an aqueous solution painted on several times daily and allowed to dry was used, while in the more severe cases wet dressings of picric acid were applied, held in place by a facial mask. Lessening of the itching, and pain attendant upon the inflammatory condition was almost immediate. Reduction in the serous exudation and softening of the crusts were equally prompt. Improvement in the induration was rapid, as was the subsequent epithelialization. Such a rapid relief of the suffering attendant on this distressing condition was not obtained by any other means.

Picric acid alone was not as efficacious in the subacute and chronic types of the disease; it was found, however, that the curing of the lesions was hastened materially by treatment initiated by two or three days' application of the picric acid solution. The effectiveness of the usual ointments, containing zinc, tar, salicylic, calomel, mercury, etc., was much greater with than without this preliminary treatment.

Case 1.—A baby of sixteen months, who had had two previous attacks of facial eczema, each lasting about two months in the acute condition and never altogether clearing up, when first seen, had had for three months a severe weeping eczema of cheeks and forehead, with marked edema of the lids and of the glabellar region. After eight days of wet picric dressings the skin was entirely normal.

Case 2.—A particularly severe case of eczema of the buttocks and genital region, which had resisted treatment with ichthyol and zinc ointment for one month, was practically cured after two days of picric acid dressing.

Case 3.—A child of two months, suffering from a papularsudaminous eruption of the buttocks, edematous condition of the adjacent skin, and a papulomacular dermatitis with infiltration of the skin of the cheeks, presented a normal skin after seven days' treatment by painting with picric acid solution.

Burns.—The use of picric acid in the treatment of burns is too well known to bear repetition here, but results that seem exceptional, obtained in two severe cases, may briefly be cited as examples of the efficacy of this treatment in preventing destruction of, and paving the way for, the rebuilding of injured tissue. A child of seven years was burned to the third degree from the waist line to the toes of the left lower extremity in almost its entirety, with only small islands of first and second degree burns occurring in the popliteal space, groins and calf. There was a burn on the corresponding area of the right side, about one-half first degree and one-half second degree. Although the skin and subcutaneous tissue sloughed away from the entire left leg, exposing the bone in places around the ankle and foot, a complete epithelialization was obtained without skin grafting, and function of the limb was restored to its normal condition.

Another patient, five years old, sustained third degree burns of the left side of the thorax, flank, buttocks and upper half of the thigh. This area also was induced to heal completely without skin grafting and with only a small area of cicatrical contracture in the groin. In the first case, a private patient, the picric acid was applied as a wet dressing within a few hours of the injury. There was a prompt relief of the pain, which never returned; there was surprisingly little shock and no secondary infection of the burned area. It is fair to assume that without the preserving and protecting action of the picric acid the islands of epithelial tissue, necessary for the recovery of the leg without grafting, would never have been preserved; and that without the anesthetic effect the patient would not have withstood the shock attendant on such extensive injury. The second child was a hospital case, who came to us some weeks after the injury in a pitiable condition. The burned area was bathed in pus; temperature high; emaciation and prostration extreme. Wet dressings of picric acid quickly disinfected the damaged area; the temperature reduced on the third day and soon came to normal; the child began to sleep and eat well and had made some gain in weight at the end of the first week. Complete recovery of the denuded area also occurred in this case without skin grafting! Several minor burns of face and extremities were treated with picric acid and with universal relief from pain.

Intertrigo.—There was uniformly rapid and satisfactory improvement in every instance in which this disease was treated with picric acid. The solution was painted on the surfaces of the skin involved and they were kept from coming into contact by thin layers of absorbent cotton. In

the more severely infected cases wet dressings were used. Cures were effected in about half the time taken on similar cases treated with ichthyol solutions. The use of picric acid in intertrigo was so satisfactory that a bottle of the aqueous solution is now part of the regular equipment of the dressing carriage, and the nurses, in the routine of changing the babies' napkins, apply it whenever the buttocks appear red or irritated.

Erysipelas.—Results in the treatment of erysipelas were not uniformly successful. In certain ways they were, however, more satisfactory than the results obtained by the use of any other method. The discomfort and pain attendant upon the condition were relieved more quickly and the edema disappeared rapidly. In several cases, desquamation in cast-like masses followed the use of picric acid, leaving a healthy normal skin beneath. A reduction in the temperature in these patients was the rule, occurring with or without marked improvement in the local condition.

Herpes Labialis.—A more rapid drying up of the lesion and fewer extensions of the trouble were obtained with picric acid than with any other method used.

Ring Worm.—Ring worm of the scalp responded no more rapidly to picric acid than to other methods of treatment. Body ring worm was more easily controlled by the painting on of picric acid solution than by the use of the usual antiseptic ointments.

Psoriasis.—With the exception of immediate and constant relief from the itching, children suffering from this disease showed no particular response to the treatment.

Impetigo.—Better results were obtained with the use of antiseptic ointments than with picric acid washes. Picric acid ointments were not used on these cases. It may be that applied in this form the results would have been more satisfactory.

Vaccination.—Only a few cases of vaccination were treated with applications of picric acid. Those that were so treated from the start ran a normal course, did not become infected and gave very little local reaction. Several badly infected vaccinations treated in this manner made surprisingly rapid cures.

In conclusion, it should be stated that the use of picric acid for the foregoing conditions is not suggested as a new method of treatment. It is a method which was well known and much used some time ago, which, however, has fallen into disuse in recent years. As an aid in the relief of discomfort attendant upon skin lesions and in the production of a cure in them, picric acid has proved its worth, in some cases being almost a specific and usually of very great assistance. The danger of untoward results by absorption is negligible. The drug is safe and easy to handle, the only drawback being the permanent staining of everything with which it comes in contact.

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TRACHEITIS*

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TRACHEITIS may exist by itself and with its symptoms of cough and varying degree of dyspnea, cause the patient no little suffering. It is spoken of lightly in the text-books and often omitted from them.

By tracheitis is meant an inflammation of the mucosae lining the trachea. This is commonly catarrhal in character, but it may become infected and the secretion show pus. Diphtheria invades this organ and malignant disease may exist.

But that which concerns us most is the inflammation that gives frequent cough as its chief symptom. The cough is distressing almost as soon as it appears and the patient finds it difficult to locate it and describe it to the doctor. There is but slight secretion, the hoarseness is mild but may increase as the inflammation spreads, the breathing is irritating and restricted.

The appearance of the fauces gives no indication of the trouble and even the larynx in the first days may show but the slightest blush to account for the symptom. It was this slight blush that misled me for a long time. I treated what I thought was a beginning laryngitis and overlooked the deeper trouble.

The diagnosis can be made only by an inspection of the trachea as thorough as the patient can be brought to permit. It is possible, however, even when there is great irritation to gain the co-operation of the patient and with a little deftness of technique, not hard to acquire, to see at least the third tracheal ring.

Inasmuch as I have had to learn some little methods of getting a good view of the trachea since I have been studying the organ and because they are of assistance to anyone who cares to use the throat mirror, I shall call attention to them.

In order to get the vocal cords separated so as to see through between them, they must be lifted up with the larynx into the highest position possible and then separated The method of lifting the larynx is to have

*Jour. Record of Med., April, 1914.

the patient phonate "e," but this closes the chink and keeps it closed so long as the patient thinks the sound.

If the patient is told what is wanted and shown the excursion the larynx makes during phonation, he will be interested and experiment with his finger on his Adam's apple until he can raise the organ more readily. Then if he is asked to say "huh" and "hay" and finally "he," and hold the note the larynx will be high up, his lips will be spread farther apart and at the same time, the tongue will be easier to manage to prevent humping in front of the mirror. The next step is to ask him to do these things and when just in that position, to breathe gently. The breathing will separate the cords and permit a view of the trachea beneath them. This technique is not complicated nor laborious. The patient is interested and he will usually learn it about as quickly as I have been telling it, provided always that he is told what it means. He is ready to do "team work."

The trachea thus exposed to view will show varying degrees of redness and hyperemia according to the intensity of the inflammation. The second and third rings are readily seen and often enough by a little shifting of the position of the head, one can see much farther. I have several times been able to see the separation of the bronchi in this manner.

If there are streaks or areas of redness along the canal, they are the points of reflex irritation and they must be reached. If there is profuse and deep congestion, it is usually high up in the trachea and it must be treated locally. The treatment may be general in addition, but to get quick results, the applications should be local. It is well to remember that just touching the larynx and not getting into the trachea, itself, is in this regard, a general treatment.

In order to accomplish this, the patient needs further instruction as to his part of the "team work." In addition to teaching him how to hold his tongue with the napkin, he should be told what to expect. The application will always produce some spasm.

I tell my patient to be ready to do instantly exactly what I direct and rehearse him in advance in saying "hal." Then when I have reached the larynx with my applicator and the cords automatically close to bar further passage, I have him breathe or attempt to breathe at the word of direction. Meantime, the applicator is resting on the cords. It takes only an instant, and when he begins to attempt to breathe, the applicator slips through and the tracheal region is under local treatment.

The great spasm that always comes at this instant should be foreseen and the alarm of the patient may be lessened by words of reassurance.

If he is told to breathe through his nose, it will give him something else to think about and really warm and prepare the air better for its passage through the trachea. The excitement will soon be over but is well always to warn the patient of this in advance, else he may think he has been roughly handled and fail to return.

Tracheitis may thus be treated with antiseptics and astringents and satisfactory results follow their application. The intratracheal application is necessary to promote a cure and general treatment will not do this. Such remedies as glycerin and ichthyol, silver nitrate 1 per cent., argyrol, petrogen iodine, saturated solution of iodoform in ether, etc., may be thus used with good results as they are indicated.

I have spoken thus in an elementary way, because in my judgment many of these cases have been overlooked through an impression that they are too difficult to observe and handle.

When there is tickling cough that can not be located either in the bronchi or larynx, the trachea should be examined and frequently, it will show the trouble. No expensive or unusual apparatus is necessary. A light, a head mirror, a laryngoscope and a long curved applicator with some cotton to twist firmly upon it, and one is fully equipped.

THE TREATMENT OF CONJUNCTIVITIS*

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On first thought it might be supposed that the treatment of conjunctivitis, had become almost empirical and could be pigeon-holded into obscurity as not deserving of any but passing mention. In view of the fact, however, that many cases are seen by the general practitioner as well as the specialist, the subject deserves an occasional consideration, particularly in a periodical of this kind. Owing to the enormity of the subject only a general consideration will be attempted, and the purpose of the article accomplished if it serves as a working basis.

It is a difficult subject to classify with clarity and conciseness, and there may be good reasons for differences of opinion. To the beginner the nomenclature is apt to be confusing. The following classification is designed to serve as a skeleton

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possessing ample room for elaboration by inclusion of the rarer types.

This classification is in three groups:

First is a grouping based on the clinical type of the inflammation, and the character of the discharge.

Second is a bacteriological grouping in which are all those where a definite microorganism is known to be the causative agent.

Third is that group in which are classified all those special varieties which posess distinctive features, or are of unknown etiology, or both.

It will be seen that a given variety may be classified in one or more of the groups, and it is due to this fact that a simple classification is impossible. When only the more common forms in each grouping are considered the subject is rendered quite comprehensible. An abbreviated classification must serve the present purpose.

GROUP I.—(GENERAL)

1. Acute catarrhal conjunctivitis.
2. Chronic catarrhal conjunctivitis.
3. Mucopurulent conjunctivitis.
4. Purulent or suppurative conjunctivitis.
5. Pseudo-membranous and membranous conjunctivitis.

GROUP II.—(BACTERIOLOGICAL)

1. The pyogenic group of bacteria, *viz.*, staphylococcus, streptococcus, pneumonococcus, etc.
2. Gonococcus.
3. Koch-Weeks's bacillus.
4. Influenza Bacillus.
5. Diplobacillus.
6. Tubercle bacillus.
7. *Spirochaeta pallida.*
8. Diphtheria bacillus group.
9. Xerosis bacillus.

GROUP III.—(SPECIAL VARIETIES)

1. Phlyctenular conjunctivitis.
2. Follicular conjunctivitis.
3. Trachoma.
4. Vernal Catarrh.
5. Pterygium.
6. Parinaud's conjunctivitis.
7. Toxic conjunctivitis (*e.g.*, Atropin).

Treatment of Acute Catarrhal Conjunctivitis.—Here we have an acute catarrh of a mucous membrane, similar to what takes place in other parts. The conjunctiva must be kept as free as possible from the discharge, and none of it allowed to accumulate. For this purpose a three per cent. solution of boric acid used as a wash is efficient. The patient should be instructed to bathe the eyes with warm solution every two or three hours, or as often as necessary to prevent accumulation and drying of the discharge. Pledgets of absorbent cotton dipped into the solution are preferable to the eye-cup, providing the hands are well scrubbed before doing so. The solution may be injected with a dropper. A solution of mercury bichloride (1:8000) may be employed in the same way. Where there is considerable inflammation with copious discharge a solution of silver nitrate (1 per cent. or 2 per cent.) should be applied to the conjunctiva of the everted lids with a cotton-wound applicator or tooth pick, at two or three-day intervals. The frequency of the application depends somewhat on the strength of solution used. If a two per cent. solution is used there is formed a deposit on the surface of the conjunctiva consisting of fibrin, coagulated material and cast-off surface epithelium, which deposit usually comes away in a few hours, leaving a clean surface. Should the resulting reaction be severe, the next application should not be made until this has subsided. Usually a one per cent. solution answers the purpose, it being less painful, and not producing so severe a reaction. When the inflammation is a severe one and well advanced it might be wise to make the first application with a two per cent. solution and the following ones with a one per cent. solution. The formation of the superficial slough is desirable as it serves to carry away with it hosts of bacteria with which it may be impregnated. It also produces a hyperaemia and stimulates phagocytic function of the leucocytes.

The patient is given a solution of argyrol (15 to 25 per cent.) of which a drop is instilled into the conjunctival sac, three or four times a day. Protargol (5 to 15 per cent.) may be used instead. Both of these drugs may be used in stronger solutions, but with no better results, providing the silver nitrate is applied by the physician. Argyrol has the property of penetrating the innermost folds of the conjunctiva, and of floating any free secretion out of the sac. It also remains in the sac a considerable length of time, patients sometimes remarking that they have blown it out of the nose an hour or more after its installation. For the relief of photophobia, if any be present, a pair of London smoked glasses will suffice. For pain, hot applications will be found to be gratifying. Avoidance of dusty places and places where the atmosphere is laden with irritating substances is imperative. Bandaging should not be done as this interferes with the escape of the discharge. A smear and culture should be taken whenever possible. Mild cases clear up quickly and often yield to instillations of argyrol without any other treatment. This is a frequent clinical experience.

When the lids tend to become glued together during the night, an ointment should

be applied at bedtime, and perhaps once during the day. For this any of the following may be used: white vaseline, preferably that put up in tubes; three per cent. boric acid in petrolatum; or one-half to five per cent. of white precipitate ointment. When the acute stage has subsided the treatment is that of chronic catarrhal conjunctivitis, which will be given under that heading.

Chronic Catarrhal Conjunctivitis.—This is sometimes called simple chronic conjunctivitis. While there is always an altered secretion it is often so little that it escapes notice. It is only during the sleeping hours at which time the lids are stationary, that it accumulates in sufficient amount to be seen, and even then the only evidence is a slight crusting on the lid margins, with perhaps some sticking together of the lids. Lacrimation is apt to be increased and is obviously not a discharge because it is not an exudate.

The cause of the catarrh must first be eliminated as far as it is in the power of the patient to do so. Foreign bodies should be looked for, and removed if found. It is very important to prevent the drying of the discharge on the lid margins, thereby preventing loss of cilia, and excoriation at the lid margins. Cleansing with boric acid solution, followed by the application of any of the ointments previously mentioned, at bedtime and once or twice during the day will accomplish this purpose. In persistent cases the ointment of the yellow oxide of mercury (½ to 1 per cent.) may be used. Silver nitrate is employed when the discharge is temporarily increased, as in acute exacerbations. To influence the chronic catarrh astringents are employed. Toleration by the conjunctiva, of any one astringent when used for a long time, may be circumvented by changing the drug employed from time to time. A variety is therefore desirable. Then again, the same drug may not be equally efficient in all cases. Formerly complex gun-shot prescriptions were commonly used but these have now become justly obsolete. It is better to use simple solutions, for the reason that results are more apt to be uniform, and conclusions more easily arrived at. Personal preference for a given drug is apt to manifest itself, and rather than incur the risk of this, it seems best to enumerate a few astringent drugs, any of which may be used. In the order of their strength these are, copper sulphate (⅛ to 1 per cent.) in equal parts of glycerin and water; zinc chloride (grn. ss to i) in 1 oz. of water; zinc sulphate (grn. i to iv) to oz. 1; alum one-half per cent. in water, or in the form of the pencil; tannin one per cent. in water or glycerin, or both. The zinc salts are specific when the conjunctivitis is caused by the diplobaccillus.

When used in weak solutions they may be instilled frequently, *e. g.*, three or four times a day, but when stronger solutions are employed once, or at most, twice a day is sufficient. In the beginning it is a good plan to have the patient come to the office every day and have the conjunctiva touched with the alum pencil. Later the frequency of this application may be reduced to every second day, and still later to every third day, etc., gradually diminishing the frequency of the application. The tannin is well combined with biborate of soda (1 per cent.) and glycerin. The glycerite of tannin may be used in a one or two per cent. solution. The biborate of sodium forms an incompatibility with the zinc salts, throwing down an insoluble zinc salt, and therefore this combination should not be used.

In these chronic cases the refraction should be carefully gone over, and any existing error corrected. Some of these chronic cases where there is little or no discharge, little or no active inflammation, and where the conjunctiva looks pale and shiny, are very vexing to the physician. They are often cases which have been under treatment for a long time and continue to complain of irritability and burning of the lids principally at their margins, and a feeling as though there was a foreign body under the upper lid. They are very often helped and made comfortable if the use of the stronger solutions and applications are stopped, and a mild collyrium employed. A suitable one is the following:

Acidi Borici	grn. xij
Sodii Chloridi	grn. iv
Glycerini	♏x
Aquae q. s. ad	f. ℥j

Alum (grn. ss to oz. 1) may be added to this and camphor water used instead of the rose water. In some clinics a weak solution of argyrol (10 per cent.) has been used for these cases. In fresh solution it has a decidedly soothing effect.

A chronic catarrhal conjunctivitis is usually present where one or more chalazia have been existent in the lid for any length of time. In these cases it is necessary to remove these cysts after which treatment is directed to the conjunctiva. In like manner any existing disease of the lacrimal apparatus must receive treatment. The ocular catarrh accompanying nasal affections, *e.g.*, rhinitis, hay fever, etc., usually disappears after removal of the cause, and requires only bathing with boric acid

solution. Cases which have been neglected for a period of years are very apt to lose cilia, and to develop trichiasis, distichiasis, and a greater or less degree of ectropion of the lower lid. The result of this is that the chronic catarrh of the conjunctiva is much aggravated and a vicious circle established. Owing to the fact that in these cases the puncta lachrymalia are in an unfavorable position for properly carrying off lacrimal secretion, an epiphora results.

Mucopurulent Conjunctivitis.—Regarding other varieties of conjunctivitis mentioned in the first group, I would like to emphasize the importance of nomenclature. It should be remembered that they are descriptive terms which do not tell the whole story. One ought never to think of them without at the same time bearing in mind the various microorganisms which can be the causative agents, the knowledge of which has seemed to complicate the nomenclature, but which in reality has greatly simplified the subject. The difficulty lies in the fact that there are a number of varieties of disease of the conjunctiva, the etiology of which is still unknown. The discovery of a definite cause has seldom failed to make treatment easier. It follows that all the forms of conjunctivitis where there is at some time a mucopurulent discharge may be called mucopurulent conjunctivitis, regardless of the kind of microorganisms causing them. Nomenclature according to group two, *i.e.*, bacteriological, is more exact and should be used whenever possible. The difference between the mucopurulent and the purulent forms of the disease is in reality only one of degree. In the latter variety, owing to the greater severity of the inflammation, the discharge is very profuse, the conjunctiva greatly thickened, and what is most striking clinically, there is great swelling of the lids, especially the upper one. In some cases it is so large as to completely overlap the lower one, making inspection of the conjunctiva and eye-ball very difficult. On account of the contagiousness of these forms of conjunctivitis, prophylaxis should be scrupulously enforced, both as regards the patient, and others who are in the immediate vicinity. The Credé procedure should be executed in all newly-born infants. A drop of silver nitrate (2 per cent. sol.) should be instilled into each conjunctival sac immediately after birth. In the case of adults where only one eye is inflamed, the uninflamed eye should be protected by a watch-glass and adhesive plaster, and the use of collodion at the margins of the dressing. In this way contamination with secretion from the inflamed eye is prevented. All dressings, linen, etc., which come in contact with the patient, or used by those in attendance should be burned or carefully sterilized. Nurses and physicians should be careful to avoid carrying the infection to their own eyes, or the eyes of others with whom they come in contact. A smear and culture is important in these cases. The treatment is practically the same for all forms of mucopurulent and purulent conjunctivitis, and for the sake of brevity may be divided into that for the milder, and that for the severer types of the disease.

The mild types.—Frequent cleansing of the eye is imperative and any of the following washes may be employed in warm sterile solution: Boric acid (3 per cent.); potassium permanganate (1:5,000); mercury bichloride (1:10,000). The eye should be irrigated as often as necessary to prevent accumulation of discharge, from two to four-hour intervals being of sufficient frequency. A special irrigator with a flattened end is convenient as it can be introduced under the lids. Flushing the sac with pledgets of absorbent cotton immersed in the solution is, however, quite effectual, providing injury to the tissues, and especially the cornea, is avoided. During the night the frequency can be diminished somewhat. Cold applications should be applied, and are of special service in the early stage of the inflammation. The temperature of the conjunctival sac can be perceptibly lowered by the external application of cold, in consequence of which the growth of microorganisms present is more or less inhibited. The Koch-Weeks' bacillus is particularly susceptible in this respect, and the gonococcus less so. However, in both of these varieties it is a very valuable procedure. Small sized pledgets of gauze or cotton should be moistened and placed on a piece of ice, and after becoming thoroughly cold, applied to closed lids, and allowed to remain for from one to two minutes, when they are changed. This requires the services of two nurses in all except the very mild cases, one for the day and one for the night. The application should be kept up for one hour, and resumed after a two or three hours' intermission. Besides their influence on the local temperature they diminish the pain considerably.

In the second stage when the conjunctiva is no longer so tense brushing with silver nitrate (1 or 2 per cent.) should be done once a day or once every forty-eight hours. Argyrol and protargol have received universal recognition for their efficacy in the treatment of conjunctivitis, and this con-

fidence has certainly not been misplaced, despite the fact that they possess only weak germicidal properties. They can be used copiously and frequently without causing irritation. This is particularly true of argyrol which is perhaps more generally used, and which can be instilled into a normal conjunctival sac without causing any irritation. It can be employed in from 15 to 50 per cent. solution. Protargol should be used weaker 10 to 25 per cent. solution. They are instilled at three or four-hour intervals. It is said that the continued use of protargol may leave the conjunctiva thickened for a time after the subsidence of the acute stage, necessitating a more prolonged use of astringents. Fresh solutions should always be employed. As the case progresses toward recovery the frequency of the irrigations, cold applications and instillation of drugs should be diminished, beginning at night. At this time, when the secretion is no longer profuse, one must look out for drying and crusting. As mentioned under catarrhal conjunctivitis this is best prevented by the use of ointments. The treatment is now practically the same as that for chronic catarrhal conjunctivitis, *viz.*, the use of astringents. Complications are rare in the mild forms, but may intervene as a result of an accidental injury in handling.

The severe types.—The management of these cases is practically the same as the foregoing, only more energetic, and since complications are quite apt to arise, the treatment of these becomes an additional consideration. The onset is usually very rapid and it is of the greatest importance that treatment be commenced early. A delay of twenty-four hours is sometimes disastrous. The eye should be irrigated, or at least cleansed thoroughly, as often as the discharge tends to accumulate, and the utmost gentleness observed during its performance. Depending on the severity of the case this must be done at one-half to two-hour intervals. The secretion should never be allowed to accumulate under the swollen lids. This is very apt to have taken place when a well-advanced case is seen for the first time. On separating the lids in a case like this the secretion is likely to spurt out, for the reason that not having had free egress, there was accumulation under considerable pressure. The physician will de well to protect his own eyes by wearing glasses, and by working at a maximum distance. Cold applications should be continued almost constantly, but on account of the extreme tension under which the tissues are laboring, and the danger of corneal complications it is better to stop the application for an hour at definite intervals, so as to give the tissues time to regain a certain amount of warmth.

Inability to evert the lids should by no means discourage one, and if violence is required it is wise to desist, not alone because of the intense pain, but also because of the danger of injury. This admonition applies even to those who possess great skill and dexterity. Sometimes a free canthotomy will render the execution of this procedure possible, and at the same time will lessen the pressure of the swollen lids on the cornea. A certain amount of depletion will take place and also some relaxation of the orbicularis muscle. It seems to me that Critchett's procedure (the making of a verticle incision through the entire thickness of the upper lid, and suturing the flaps up on the forehead), is rarely, if ever necessary. The difficulty with which a good result is obtained by subsequent plastic operation is great, and the cosmetic result poor. A canthotomy heals quickly, leaves no deformity, and may be repeated as often as necessary. Scarification near the corneal limbus is indicated when the chemosis is pronounced, and the integrity of the cornea threatened. Argyrol or protargol should be freely used, instilled as often as two-hour intervals. By some it is recommended to build a putty dam around the orbit, and to keep the eye and lids constantly bathed with a weak solution of argyrol within this dam. Hydrogen peroxide, one-half to three volumes, may be used for cleansing, especially where it is difficult to evert the lids. With it I have had no experience, and must confess to a hesitancy because it is quite irritating in a normal eye.

The great danger to the cornea in the severe cases should be always borne in mind, and, by constant observation, prevented if possible. These are the cases which, if they recover, result in more or less impairment of vision from corneal opacities. Where the ulceration is large, and the progress not checked, staphyloma, perforation, iridocyclitis, glaucoma and panophthalmitis are, one or more of them, likely to follow. It is obvious that perforation is an event especially to be regretted, as a distrous infection of the eye ball is almost certain to follow. A staphylomatous condition of the cornea, with increased tension and threatening rupture requires the most careful watching; occurring late in the disease one would be justified in bandaging tightly for at least a part of the day or night; occurring at the height of the disease, bandaging would be very risky and

would be analogous to trying to close up an abscess cavity without draining.

The treatment of the corneal and globe complications is too large a subject to be included in this article, as likewise is the treatment of the special varieties of conjunctivitis. There are special features in each of these diseases, which require special measures. Thus in phlyctenular disease one should not forget the importance of the hygiene, dietary and general measures; in trachoma and pterygium, the value of operative procedures; and, in diplobacillus conjunctivitis, the value of the zinc salts.

REMOVAL OF SPLEEN

If done by skilled hand the extirpation of the spleen is not a serious operation. It can be performed in about twenty minutes and with hardly any loss of blood. G. Klemperer has referred twenty cases to the surgeon, who has only lost two who were already in a dying condition. The only after-effect is polycythemia. One case was operated nine years ago and is at present performing her difficult duties as nurse without any trouble.

The diseases in which spleenectomy is indicated are: 1. Cachectic anemias with splenic tumor, and 2. Cachectic anemias without splenic tumor. In discussing the former group, the following may be said: (a) Congestion of the spleen due to heart disease; (b) enlarged spleen of cirrhosis of the liver; (c) amyloidosis of the spleen; (d) syphilis of the spleen, and (e) malarial spleen hardly form indications for operation. In all these conditions the spleen may be very large and there may be considerable cachexia, but careful examination will prevent errors. In (f) leukemia and aleukemia, removal of the spleen is usually fatal. If the blood shows no increase of the white cells, the spleen should be punctured. The presence of myelocytes in the removed fluid makes it probable that the disease will later pass into a true leukemia and operation should be forbidden. In (g) lymphosarcomatosis and granulomatosis, arsenic, Röntgen rays and thorum should be employed. (h) Tuberculosis of the spleen demands extirpation if it seems likely that no other tubercles are present in other organs. (i) Malignant tumors of the spleen are usually metastatic, hence operation will be valueless. In some cases the primary tumor is small and may escape detection for a long time. (j) Bantis' disease is quite frequently cured by operation, though polycythemia will often result. It is often, however, difficult to make a correct diagnosis, hence the blood must be examined repeatedly and if necessary the spleen punctured. A careful examination of the heart and lungs is essential, and the Wassermann test should not be forgotten. If, after several months, the other organs remain sound, no glandular swelling appears and the anemia becomes worse, an operation is indicated though even then the surgeon may be surprised by a wrong diagnosis. (k) Splenic enlargement with icterus, anemia and urobilinuria is usually cured by operation. The condition may be hereditary and familial or acquired, and in many cases there is a diminished resistance of the red cells toward hypotonic salt solutions.

The second class of cases, anemia without splenic tumor, refers chiefly to pernicious anemia. Ten cases have been observed by the author. Two of these died since they came to operation in the last stages, one died later of complications. The remaining seven were all considerably improved by the operation though the blood returned to normal in only one. The exact value of an operation in pernicious anemia cannot therefore be decided at this date.—Therap. d. Gegenwart, Jan., 1914.

SANTYL IN GONORRHEA

E. Acebo writes that he has prescribed Santyl-Knoll in many cases of gonorrhea and that he has never seen any of those dry effects so common during the administration of other balsams, such as gastrointestinal disturbances, eructations, bad breath, renal pain or excretion of albumen. Patients already treated without success with other balsams and complaining of pains in the renal region received daily fifteen to seventy-five drops of santyl. There always was an anesthetic effect, eructions and hematuria disappeared, the urine cleared up and a definite cure was soon established. With combined treatment other balsams were also tried with santyl always proved to be the best internal remedy. Surprising results were also obtained in the urethrocystitis of women. Most of the patients came from the country and consulted the physician only after months, when their condition had become much aggravated. They were placed on a milk diet for eight to fourteen days and received ninety drops of santyl daily, which usually sufficed to clear up the cystitis. The patients usually slept well the first night and the burning and tenesmus disappeared promptly. In some cases hexamethylenamine was also given but irrigation of the bladder was only necessary in 2 per cent. of the cases.—Espana Medica, 1914, No. 107.

Progress in Materia Medica and Therapeutics

LECITHIN IN GENERAL PARALYSIS AND IN PSYCHOSES

Lecithin has been found of great value in diseases of the spinal cord, *general paralysis* and in psychoses. The fact established by Glikin and Peritz that in tabes the bone marrow becomes poor in lecithin, pointed to the probability that lecithin medication would be of use. Lecithin has proved of value in many cases of tabes and *general paralysis*, as is evident from the communications of Hartenberg, Nerking and others. Nerking, for example, describes a case of svere tabes in a syphilitic subject, in whom the daily administration of three, doses of one teaspoonful of lecithin chocolate produced an undoubted and lasting improvement in the general health, a gain in weight of five pounds and return of the appetite and energy. The same author also reports a case of hysteria in a woman aged twenty-two, who also suffered from nervous palpitation, nervous gastric disturbances and anemia. She had been treated for two years without effect with arsenic and other drugs; lecithin, combined with baths and galvanization, caused a considerable increase in the hemoglobin content of the blood, increased the patient's capacity for work and enjoyment of life, while she gained ten pounds in weight in three months.—E. Merck's Ann. Report, Vol. XXVI.

BENZOL IN LEUKEMIA

A report of two cases of leukemia in which benzol was used is made by F. H. Smith, of Abingdon, Va. He gives a review of the literature of the method and calls attention to its possible dangers, which have also been noticed by various authors. He calls attention to the fact that benzol is benzene, not benzine. Its formula is C_6H_6. Its toxicology has not been completely worked up, and there is no definite dosage of the drug. Koranyi begins with a dose of 0.5 Gm., increasing till some effect on the blood picture is shown, and it seems that, for safety, constant recourse to blood examination should be taken. In most of the reported cases the Röntgen ray seems to have been used for some time before the benzol, the assumption being that the Röntgen treatment prepares the way. In the cases herein reported there was no Röntgen treatment. The special features are discussed and Smith says: "Summarizing our impressions here, there can be no doubt that benzol is a remedy of remarkable potency in myeloid leukemia. My own case confirms this favorable impression: benzol accomplished feats hitherto undreamed of in the rapid subsidence of signs and symptoms in a fatal disease. Beyond a doubt also it is a two-edged sword, as Billings says, and he who uses it without bearing in mind its grave possibilities is running a serious risk of substituting for one disease a still more fatal one." He especially emphasizes this risk and does not think that it will become a popular remedy. We have as yet no proof that benzol is a specific, and it is significant that not one clinician has yet expressed himself with reference to the future of these patients. Smith hazards the guess that within the next six months the journals will contain numerous reports of recrudescences of the disease after benzol suspension. It is, he says, "a remarkable remedy, spectacular in its effects, deserving of the utmost respect as well as caution in its administration, yet, I fear, not a specific." —Jour. A. M. A., March 27, 1914.

SODIUM THIOSULPHATE IN PITYRIASIS VERSICOLOR

M. Oppenheim has for some years used a very simple method of treatment for pityriasis versicolor, which has not failed in a single case, even when other methods of treatment had previously proved unsuccessful. He used a 10 per cent. aqueous solution of sodium thiosulphate. It is used as a lotion for the affected areas of the skin and is applied at least three times daily. The diseased parts are lightly washed and rubbed with a cloth dipped into the solution, and are then dried. By means of this treatment the pityriasis areas grow pale in the course of eight to fourteen days and gradually disappear. Recurrences can be prevented by one application a day. The simultaneous use of alcohol has not, in the author's experience, proved beneficial. The treatment furnishes equally favorable results in erythrasma, but is less satisfactory in herpes tonsurans and pityriasis rosea.

Sabbatani recommends sodium thiosulphate to supplement disinfection of the skin by tincture of iodine. According to his instructions, the tincture of iodine is painted on in the usual way, the area is

then covered with cotton wool, and after five to ten minutes a lukewarm, aqueous, sterile 5 per cent. solution of sodium thiosulphate is poured over it. In this way the skin is disinfected and decolorized, and neither the surgeon nor the patient is particularly troubled by the smell of the iodine. Lemaire and Chabanier have sought to alleviate the local irritative effect of tincture of iodine by sodium thiosulphate solution. According to Taphanel, sodium bisulphite solution may be used in its place, for, in the author's opinion, it not only abolishes the secondary effects of iodine and removes the iodine stains from the skin, but itself acts as a powerful disinfectant. Sabbatani, however, prefers sodium thiosulphate.—E. Merck's Ann. Report, Vol. XXVI.

ATROPINE IN DYSMENORRHEA

While investigating the causes of bradycardia and arrhythmia in the puerperium, J. Novak (Wien. klin. Woch., Dec. 11, 1913) found that the subjects of this condition, which he traced to increased excitability of the vagus, were frequently also the subjects of dysmenorrhea. It was therefore natural to suppose that this was due to excessive irritability of the involuntary nervous system and that atropine would accordingly be beneficial. It has lately been shown that this drug in small doses stimulates and in large doses paralyzes the movements of the uterus. This application of atropine is not altogether new, and Drenkhahn has lately injected a watery solution of atropine into the cervix, or has inserted tampons soaked in a solution of atropine into the posterior vaginal fornix. The results were most encouraging. The author prefers to give atropine by the mouth or rectum, for, though the direct application of atropine to the uterus ensures a more intensive action with a relatively small dose, yet the disadvantages of this method, particularly in umnarried women, are obvious. Out of thirty-eight cases of dysmenorrhea the pain was continuous during menstruation in two cases, and in one case the character of the pain was not defined by the patient. In the remaining thirty-five cases the pain was spasmodic, suggesting colic or labor pains. In thirty cases the atropine reduced the pain to a negligible quantity or cured the completely. Backache and a sense of tension in the lower abdomen were scarcely affected by the drug. In seven cases it was ineffective. Among these were the two cases in which the pain was continuous, not intermittent. Possibly some of the failures may have been due to an unsuitable dosage, for in small doses atropine has a stimulating effect on the involuntary nervous system. It is not surprising that the drug should fail in a certain percentage of cases of dysmenorrhea, for this name probably covers various conditions due to many different causes, such as neurasthenia, infantilism, mechanical stenosis, and other anatomical changes in the uterus, hyperemia, spastic contraction and inflammatory changes of the uterus. It is not clear how atropine relieves the pain of menstruation. It may reduce the spasmodic contractions of the uterus, and it may also check spasm of the uterine vessels, to which some authorities attribute the pain in certain forms of dysmenorrhea.—Brit. Med. Jour., March 7, 1914.

INFLUENCE OF RADIUM ON SPLENIC TUMORS

H. Schüller states that splenic and glandular tumors such as occur in leukemia and Banti's disease are materially diminished in size if exposed to radium, even in cases where the Röntgen rays have no influence or have lost their effect. At the same time, the general condition and the blood improve considerably. It is, of course, impossible to say at this time how permanent the effect is. Mesothorium and rademanit seem to be equally as active as radium. With careful technique there will be no injury of the skin. Where extirpation of the spleen was performed later, no adhesions were found as a result of the treatment. No general untoward symptoms were ever noticed. The value of the treatment at present seems to be chiefly to prepare patients in a decrepit condition for subsequent operation.—Berl. klin. Woch., Feb. 16, 1914.

TREATMENT OF CHRONIC MOTOR INSUFFICIENCY OF THE STOMACH

The irrigation and emptying of the stomach customarily carried out in cases of chronic insufficiency of the motor activity of the stomach not only inconvenience patients, but may in time lead to threatening symptoms of collapse on account of over-exertion or of too great abstraction of chlorides from the weakened organism. But, according to M. Gockel, both the irrigtation and the expression may be reduced or entirely avoided if, besides a regulated diet and any symptomatic measures which may be required, such as rectal saline infusions, nutrient enemata, etc., energetic antacid and antifermentative treatment is carried out. In the author's experience, the administration of magnesium-perhydrol serves this purpose; it has

a favorable effect not only on the superficial congestive process, but also on the symptoms accompanying and following it.

The action of the preparation is not difficult to explain if it is borne in mind that it is decomposed in the stomach by the action of the acid secretion into hydrogen peroxide, or oxygen and magnesium oxide, or the magnesium salts of the acids which are present. The hydrogen peroxide thus formed deodorizes and ozidizes the foul smelling, stagnating ingesta and the putrefactive products arising as a result of the congestion, and thus the possibility of auto-intoxication is diminished. The neutralization of the acids by the magnesium oxide acts as an antizymotic, as the chief fermentative organisms present, *e.g.*, yeast and lactic acid bacilli, grow badly in weakly acid or alkaline fluids and are soon destroyed. Thus the magnesium oxide assists the oxidizing, deodorizing and antifermentative action of the perhydrol. One consequence of the alteration of the gastric contents by the products of decomposition of magnesium-perhydrol is that traumatic inflammatory irritation of the mucous membrane is prevented or at any rate weakened. Consequently the reflex spasm of the musculature does not take place or only takes place to a slight degree, and thus the organ is spared and the emptying of the ingesta into the intestine is hastened.

In the intestine the magnesium oxide or the magnesium salts cause increased peristalsis and lead to the painless removal of constipation, which is usually present in chronic motor insufficiency, and thus relieves the patient in this direction also.

Gockel attributes the improvement in the morbid condition of his patients to the substances named above, which are formed in the stomach from magnesium-perhydrol. He reports that after a few days the gastric spasm had entirely or for the most part disappeared, the diuresis increased and the feeling of thirst and fullness were cured or greatly relieved. The medication had an equally good effect upon eructations, vomiting, increase of appetite and evacuation of the bowels. In simple stenosis, as in carcinoma, the weight increased during the first weeks of treatment.

In one case of extensive squamous celled carcinoma with metastases in the liver, and in one case of carcinomatous and cicatricial pyloric stenosis with absolute insufficiency, magnesium-perhydrol failed, as did the gastric irrigation carried out for the sake of comparison.

Magnesium-perhydrol is, according to the author's instructions, given three to four times a day in doses of one teaspoonful on an empty stomach. If the motions are too frequent, the bowels are regulated by the administration of fifteen drops of a 1 per cent. morphine solution one to three times a day.

For the treatment of acidosis in diabetes mellitus, von Noorden reports that besides the fixed alkalies magnesium-perhydrol is specially suitable. It is far superior to the usual preparations of magnesia, which might be considered on account of the tendency to constipation; it may also be recommended for prolonged use. It is also indicated, according to L. Carozzi, for the digestive troubles of persons who come much into contact with lead (lead workers and compositors). It is said to be of great use in these cases.

Mention may be made of an observation of R. von Engelhardt, which possibly points to a new use for magnesium-perhydrol. A lady patient of the author's had an idiosyncrasy to fruit acids, vinegar and certain vegetables and these substances always gave rise to exanthemata and hyperemia of the pharyngeal mucous membrane. But if she took magnesium-perhydrol she could digest any mixed diet excellently.—E. Merck's Ann. Report, Vol. XXVI.

TREATMENT OF ATROPHIC RHINITIS

D. Macfarlan writes that two effects are very desirable in the local treatment of atrophic rhinitis: antisepsis, to overcome the purulent complication and ozena; and stimulation of the mucous membrane with the hopes of exercising, rejuvenating, or multiplying what secretory cells may remain. For this purpose the author believes the double salt of mercury and potassium to be most suitable. The salt is prepared by dissolving the red iodide in a weak solution of potassium iodide; approximately twice the bulk of the latter will put the former in solution to form the double compound. While the red iodide has germicidal strength in dilutions of 1:40,000, the double salt is approximately twice as strong.

Recently the author has used this compound in 1 per cent. solution as a spray in all cases of atrophic rhinitis, and the result has been so rapidly conclusive that he feels no hesitancy in stating a preference for it. Results were obtained in half the time previously required and a number of the cases were relieved in a month's time, having been treated twice or three times a week. Recurrence is, however, to be expected if the patients abandon care and cleanliness.

More or less tolerance to the irritating qualities of the solution is developed as the treatment is carried out, but it is seldom necessary to increase the strength of the solution above 1 per cent. In cases with membranes less insensible than in atrophics, a weaker solution is equally effective as germicide.

The following formula is used in atrophic rhinitis:

Hydrarg. Iodidi Rubri.....grn. xvi
Potassii Iodidi.....grn. xxxiv
Aquæ Destillatæ.....f. ℥ 3⅓
M. Sig.: Poison. Use only in spray. Do not swallow.

—Jour. Ophth. Oto. and Laryngology, Oct., 1913.

TREATMENT OF DYSENTERY

W. Lutsch recommends the following treatment for dysentery: The patient receives 5 to 7½ grn. calomel and only barley water and on the following days, barley water with a little milk. Warm applications are put on the stomach and after six hours 3¼ drams of sodium salicylate dissolved in twenty-two fluid ounces water are injected into the rectum internally. Five grn. Dover's powder is given every four hours. The injection may be repeated every second, fourth or third and fifth days, if necessary. In chronic cases the salicylate injections may also be given, while internally, good results are seen from a 10 per cent. decoction of cortex simaruba (a tablespoonful every three hours). The salicylate injections also do good service in the simple intestinal catarrhs and the enteritis of children (90 Cc. of a 3 per cent. solution for children one year old). The solution should always be at body temperature and should be retained at least thirty minutes.—Muench. Med. Woch., March 3, 1914.

TREATMENT OF HERPES ZOSTER OTICUS

V. Dabney, of Washington, D. C., writes that there is no specific for herpes of the ear, and the palliative measures adopted to meet the symptoms as they arise, are but futile attempts at best, always saving the use of opiates of course. Heat is comforting in most cases, though cold is at times grateful where there is fever. Opening the vesicles is idle, and does not relieve either the pain or the deafness. Ordinary dietetic precautions should be taken, the bowels kept open, and quiet enjoined. I am skeptical as to the curative or abortive effect of any and all local applications, as herpes in its resistance to treatment exhibits its self-limited feature, which is, incidentally, another reason for considering it as an acute infectious disorder. It is sufficient to recall that local treatment cannot reach the ganglion or the posterior root. In prolonged convalescence the dermatologists seem to attach importance to the exhibition of zinc phosphide, large doses of quinine and strychnine, arsenic, zinc phosphide and quinine together (Stelwagon), and numerous coal tar products. The mere multiplicity of the remedies would excite suspicions of the efficacy of any one or two or all of them. Of course, if the pain appears insupportable, as it does not infrequently, morphine or some other anodyne is to be used, though with the utmost caution, as these patients are peculiarly susceptible to addictions. In the author's case codeine, in half-grain doses sufficed, though it had to be given three times a day at first. This was reduced without the patient's knowledge, till she was getting sterile water twice and codeine once a day. For insomnia, a prominent symptom in many cases, veronal is useful. Galvanic, or, better still, high frequency electricity is most useful for the relief of the postherpetic otalgia, though it has to be repeated from time to time. Protection against drafts and cold by enveloping the side of the head in wraps is worthy of trial, but the local application of ointment and dusting powders is useful, if at all, merely in aiding desquamation, and softening the skin where it is over a mobile surface, as the lower part of the mastoid. Head speaks well of the painting of the vesicles to prevent untimely rupture and infection, and that ichthyol is similarly useful at times.—N. Y. Med. Jour., Feb. 7, 1914.

LECITHIN IN NERVOUS DISEASES

Lecithin therapy is of special significance in the treatment of nervous diseases. As lecithin is a highly important component of the brain and nerves, which is never absent under normal conditions, and which is used up, as Gautier has shown, through the activity of these organs, the obvious indication is to provide for the restitution of this substance. Otherwise the continuous loss of lecithin would lead to transitory or permanent injury to the nervous system. Although lecithin is regularly introduced into the organism in the food, it is usually insufficient in amount, and may be present in the food in a form or combination which is absorbed with difficulty in the digestive tract. We know, for example, that lecithin is present in the grains of corn chiefly in the form of albumin compounds, from which it can with difficulty be isolated by chemical means. We may,

therefore, assume that in the stomach and intestine the absorption of these bodies also takes place more slowly and less completely. This assumption is borne out by experience, for we know from Nerking's investigations that the action of pure and free lecithin is alone reliable. The success obtained by the use of really pure lecithin in the most varied nervous diseases therefore justifies the endeavor to use only the purest lecithin for therapeutic purposes.

Danilewski, acting upon the assumption that diseases of the nervous system are often caused by defective neoplastic restitution within the nerve substance, was the first who attempted to raise the disordered nerve tone by the administration of lecithin. He tried the drug on himself, taking doses of three to five grn. The good result was shown by improved nutrition, increased self-reliance, resistive power and mentol vigor. Gilbert and Fournier obtained equally good results in neurasthenia. They gave single doses of 1½ to 7½ grn.—E. Merck's Ann. Report, Vol. XXVI.

TREATMENT OF HYPERACIDITY

The changes of opinions that have occurred and the changes in the methods of treatment in so-called hyperacidity of the stomach are noticed by Adolf Schmidt, (Halle, Germany), who reviews the theories and etiology of the conditions. Practically the term is taken to mean cases of increasing gastric disturbance, appearing at various intervals after meals, or the ingestion of special kinds of food; heartburn is a common accompaniment. Tests with the stomach-tube reveal either hyperacidity or hypersecretion, and the latter may be separated into a digestive and continuous type. The latter, when appearing periodically, is known as Reichmann's disease or gastrosuccorrhea. Pawlow's opinion, that pure gastric juice has the same percentage of hydrochloric acid, must in the light of recent research be abandoned unless we assume that the superficial epithelium produces concentrated alkaline fluid, together with pure gastric juice, which is paradoxical according to Gregerson. Schmidt concludes that the stomach secretion must vary under pathologic conditions. Nervous influences come into play here and the question arises whether or not there is an etiologic relationship between the hyperacidity of the stomach and the subjective symptoms. The anamnesis must not be depended on without the use of the stomach-tube. Still more important is the question whether this hyperacidity occurs as a disease dependent only on nervous causes, or whether it always has some organic lesion as a cause. The old notion that it was a pure gastric neurosis has changed on account of the rediscovery of duodenal ulcers, and he attaches weight to the Mayo brothers' opinion in this regard. We have reason to suspect such an ulcer if roentgenoscopy reveals the peristalsis, at first increased, stops in the later period of digestion, that the well-known six hours' residue remains, and the two periods are separated by a spasmodic contraction of the pylorus corresponding to the setting in of the hunger pains. Hence the importance of careful examination by all available means, and other causes must also be sought. The purely nervous cases are less to the fore, but we would be premature in entirely denying hyperacidity in some cases as a unit *per se*. In treatment the principal point is, not to confine ourselves entirely to the stomach alone, but also to calm and strengthen the nervous system. Some patients are best treated by being sent at once to a hospital or sanitorium, and Schmidt demands this in every severe case. Naturally, we try first to reduce the secretion. Atropine acts this way, but its continuous use is not advisable, nor is that of the alkalines, which may irritate the stomach glands. Schmidt favors the use of the magnesium oxide, combined with a small amount of belladonna and a purgative, such as sodium sulphate. Silver nitrate owes its excellent effect on hyperacidity to its astringent effect on the circulatory cells and partly to its blunting the hyperirritability of the mucosa. For the latter purpose it should be given half an hour before meals; for the former, a solution to rinse the stomach in the morning by the tube. Diet is perhaps more important, and foods that act as secretory stimulants, like spices, coffee, strong alcoholics, etc., should be avoided. As to special diets, it is difficult to keep them up for any length of time, and Schmidt has long returned to a mixed diet and strict observance of the following rules: All food must be thoroughly cooked and carefully minced. The stomach must come to rest at least once during the twenty-four hours and the times of the meals changed to secure this. Drinking should be generally diminished and restricted to times when the stomach is not filled with food, especially in cases of ptosis. If the condition is severe or combined with ptosis, he makes the patient stay in bed for two weeks, and this he considers important. Sometimes hot compresses are used to bring relief—twice daily for two hours. At night they are replaced by cold hydro-

pathic compresses. Washing the stomach is indicated only when the hyperacidity is based on catarrh. All these directions are given in more detail with the reasons for their use. As regards operation, the necessity varies according to the case. He would advise an operation in a young man in active business who wishes at all costs to get rid of his pains, rather than in one who is not so pressed and can stand his troubles and regulate his diet. The manner and extent of the operation must be determined by the findings, such as ulcer, gallstones, adhesions, etc. If there are no anatomic lesions at all found, he would advise gastro-enterostomy without closing the pylorus and the dietetic and other treatment continued. In no case should the patient be permitted to get up and eat anything he wants too soon after an operation.—Jour. A. M. A., Feb. 7, 1914.

TREATMENT OF CYSTINURIA

Though cystinuria is a very rare disease, the discomfort that it causes may be so pronounced that an effective treatment is very desirable. G. Klemperer and M. Jacoby have observed a typical case and have been able to check the output of cystin materially by restricting the ingestion of proteid food. This low diet cannot, however, be continued for any length of time, so other measures had to be resorted to. It was finally found that the administration of 6 to 10 gm. sodium bicarbonate not only prevented the precipitation of cystin but actually reduced the amount of dissolved cystin to zero. It seems that an increased alkalescence of the blood-serum will serve to decompose the cystin completely.—Therap. d. Gegenwart, Mar., 1914.

TREATMENT OF GALLSTONE COLIC

M. T. Woodhead, of Fort Plain, N. Y., writes that all medication by month, at least for the time being, is contra-indicated. Many times instant relief may be had by a tub bath at a temperature of about 110° for fifteen to twenty minutes. The hot bath not only relieves the congestion in the liver and gallbladder, and by so doing diminishes the pain but also by its psychic effect diverts the patient's mind. Should the patient still be suffering with pain at the completion of the bath, give morphine sulphate grain one-fourth hypodermically and place the patient in a warm bed. In order further to relieve the constipation and the load of toxins, the colon should be irrigated with about two quarts of hot decinormal saline solution.

The next procedure is the application of a large cold-hot pack placed over the upper zone of the abdomen. The preparation of this pack is as follows: A compress of flannel is wrung out of water at room temperature and applied over the region of the abdomen previously specified. Immediately afterward, a hot flannel compress is bound over it. When the cold compress is dry, it is again moistened, while the hot compresses are changed every hour. The cutaneous vessels are first contracted by the cold and later dilated by the heat, bringing about an active hyperemia of the skin and stimulating, through the nerves, the secretion of mucus in the gallbladder. The circulation is also improved. This latter treatment is continued until all signs of inflammation in the liver and gallbladder have subsided.

Where the irritability of the stomach persists and the vomiting of bile and retching do not respond to these measures, it is well to perform a gastric lavage. On the following day, the more acute symptoms having subsided, the patient is given a course of calomel followed by a saturated solution of magnesium sulphate, two ounces, served cold. Calomel is one of the best drugs we possess for removing the bile from the congested liver and gallbladder.

The diet during the first twelve hours, provided that the stomach is in a receptive condition, consists of hot tea and plain toast or milk with lime water. As the patient shows improvement, the diet is gradually increased. Special emphasis is placed on a strict dietary, excluding eggs, fruits, and acid vegetables for several weeks. Our patient should be encouraged to drink freely of spring or plain water, since by so doing the biliary passages are kept active and the bile does not become concentrated.

As prophylactic measures, the author recommends the use of Carlsbad salts for two or three months:

Magnesii Sulphatis..... ℥ii
Sodii Sulphatis..... ℥i
Sodii Bicarbonatis..... ℥iiss
M. Sig.: One teaspoonful in a tumbler of hot water before each meal.

On account of its action in inhibiting the growth of bacteria in the bile and preventing the nucleus of a calculus, hexamethylenamine, grains five, every four hours, is given for several weeks.

Moderate exercise is necessary to stimulate the blood and indirectly prevent congestion in the liver and the resulting cholangitis and cholecystitis. Excessive exercise is to be avoided, since, in a patient predisposed to chronic cholelithiasis, riding,

golf, automobile tours, or any exercise which jolts the body, may be sufficient to give rise to another attack of gallstone colic.

There are frequently recurring acute attacks of gallstone colic, as well as many chronic cases which do not respond to medicinal measures, and rather than temporize, such cases should be dealt with surgically.—N. Y. Med. Jour., April 18, 1914.

TREATMENT OF PELLAGRA

G. M. Niles, of Atlanta, Ga., while admitting that the etiology and pathology of pellagra are yet obscure, thinks that the disease is more manageable than it is sometimes considered to be and gives the details of his method of treatment. The hygienic measures, he says, are the same as those of other exhaustive diseases with two exceptions. The first is that alcoholic beverages in any amount seem to be highly detrimental, and the other is that sunlight should be avoided, as the actinic rays seem to have an especially irritating effect which is most marked in early spring. In the diet he prohibits corn bread and corn products unless he knows that they are perfectly fresh and that the corn has undergone no heating. Until the "zeist" theory is completely disproved we owe our patients this precaution. As to other dietetic measures, it must be kept in mind that the disease is not primarily localized in the gastro-intestinal tract, but is a centralized irritation, plus the effect of toxins eliminated through that tract. The early diarrhea is mainly of central origin and to some extent compensatory and therefore does not call for a very limited regimen. Woody vegetables and foods yielding a large residue in the bowels are mechanically contra-indicated and should be replaced by other nourishing foods. The fleshy proteins are especially well borne. Sweet milk is valuable when it agrees with the patient but advising immoderate amounts without determining the digestive ability is bad practice. During the whole course of pellagra the patient should be nourished to the limit of assimilation and will generally bear and care for more aliment than when the stomach is similarly irritated from other disorders. Hypodermically, he uses iron arsenite and sodium cacodylate on alternate days for about two weeks in small doses. After the acute symptoms seem controlled he gives two injections weekly for several months. Sometimes when the patient is anemic he uses iron preparations instead. Internally he employs a combination of saturated solution of potassium iodide and Fowler's solution in proportion of five of the first and three of the second, beginning with five drops in water, three t. i. d., gradually increasing a drop a day until arsenical symptoms appear. If gastric or intestinal intolerance occurs the proportion of Fowler's solution is diminished. The diarrhea is controlled by bismuth betanaphthol, etc., and if severe by tannigen or opium; kerosene oil enemas have also been found useful by Niles. For the infrequent constipation, the milder cathartics only should be used. The details of the local lesions are given. He does not favor the use of salvarsan. Hydrotherapy has proved beneficial in many cases and he would employ it in some form of hot and cold baths, packs, douches, etc., in almost every case. The value of encouragements to the patients and of combating the pellagraphobia which embarrasses the treatment is specially mentioned. He thinks by suitable suggestions the nerve degeneration can be helped. His experience has taught him that the prognosis should be guarded in four classes of cases: Persons over fifty years of age; alcoholics; patients with marked mental symptoms; and the weak-minded persons who change their treatment from one method to another. If the patient, however, is under fifty, will adhere to a fixed line of treatment, and faithfully cooperate with the physician a permanent cure can be expected in the majority of cases.—Jour. A. M. A., Jan. 24, 1914.

A NEW METHOD OF PROTECTING THE PERITONEUM

There is still considerable diversity of opinion as to the value of olive or camphorated oil in the prevention of post-operative peritonitis, and E. Parton even claims that oil irritates the peritoneum. Experiments were made with sterilized bolus. In rats and guinea-pigs, the author found that the absorptive powers of the peritoneum were considerably delayed by the bolus. The toxin of diphtheria becomes less toxic when shaken with small amounts of bolus, also when the suspended particles of bolus are removed with the centrifuge. Rabbits injected with fatal amounts of pure streptococcus culture did not develop a peritoneal infection if 3 to 5 Cc. of a 10 per cent. suspension of bolus were injected after the culture. The results were the same in the case of guinea-pigs with streptococci, staphylococci and colon bacilli. It is probable that the bolus precipitates the bacteria and thus interferes with their further growth. Experiments in vitro prove this assumption. If the bolus is injected a few days or hours before the experimental in-

fection, there will be no prophylactic effect. Laparotomies and intestinal operations done on rabbits without disinfection of the hands or sterilzation of the instruments were not followed by infection if the peritoneum was irrigated with large amounts (one-half to one liter) of freshly prepared but not sterilized suspensions of bolus. It would therefore seem promising to try this method after gynecological operations.—Schweiz. Rundschau f. Medizin, 1914, No. 11.

INDICATIONS FOR IODIVAL

F. Goette, of Berlin, reports a large number of cases in which he used iodival with excellent results. One patient suffered from severe asthma and the attacks were so intense that morphine had to be injected from time to time. The patient was then put on iodival (at first two tablets three times daily, later one tablet), and also took diuretin 7½ to 15 grns. twice daily. This combination proved very effective. One case of arteriosclerosis with enlargement of the heart and attacks of cholecystitis, who also complained of pains in the arm and fingers, was considerably improved by the use of iodival. The general condition was very favorably affected. In another case there was pronounced enlargement of the heart with attacks of vertigo and numbness of the extremities. After iodival had been given for some time, examination with the Röntgen rays showed a considerable decrease in the size of the heart. The attacks of vertigo had disappeared and the patient could again walk upstairs without difficulty. Good results were also seen in case of struma and the circumference of the neck decreased as much as 1½ Cm. in three weeks. Disturbances on part of the stomach or intestines were only rarely seen after iodival.—Fortschritte du Medizin, 1914, No. 5.

MAGNESIUM SULPHATE INJECTIONS IN SPASMOPHILIA

Berend used magnesium sulphate subcutaneously in treatment in forty cases, twenty-seven of spasmophilia and fifteen of eclamptic children without spasmophilia. Detailed case histories and clinical charts are given. His initial dose was 15 to 20 Cc. of an 8 per cent. solution. Twice this dose could be given daily to infants without any toxic effects. The quickest and most intense effect was on the electric excitability of the muscles and the spasms of the hands and feet. It acts somewhat more slowly on the general spasms and Trousseau's sign, and least of all on spasm of the glottis. Results were generally obtained in twenty-four hours, and it was seldom necessary to continue the treatment longer than four or six days. Phosphorus and cod liver oil were given in conjunction with it after the second day. The two treatments supplement each other. There are two marked advantages with this over other forms of treatment—recurrence seems to be much rarer and the course of the spasmophilia is decidedly shortened. Moreover, with this treatment mother's milk is less of an essential. There is no danger of inanition because food does not need to be withdrawn as in other forms of treatment. The only point to be insisted on in diet is that it must be poor in salts. The treatment is also of value in convulsions not due to spasmophilia if there is no cerebral irritation or disturbance of kidney function.—American Practitioner, March, 1914.

TREATMENT OF GALLSTONE COLIC

M. Milton Eckert, of New York, writes that the first indication is the relief of pain, and this is best controlled by the hypodermic injection of morphine sulphate, grain one-quarter, combined with atropine sulphate grain 1/150, to be repeated in one-half hour if necessary. The action of the morphine is to decrease the pain and allay the spasm; the atropine relaxes the spasm of the muscular coats of the ducts and thus allows the stone to pass through.

Locally, hot applications are applied to the right hypochondrium, in one of the following forms, hot mustard paste, hot flaxseed poultice, or hot water bag. If practicable, the patient should be placed in a hot water bath for its relaxing effect. If collapse is present, camphor, three grains, in oil or ether is indicated and given by hypodermic injection. After the colic has been controlled by these measures, the next indication is the after treatment, which should be immediately begun.

The patient should be kept in bed for two or three days, and, for the first twenty-four hours, should have a fluid diet. The bowels should be kept open by enemata, Carlsbad salts, or sodium phosphate. The hot applications to the right hypochondrium should be continued until the tenderness has disappeared.

Hexamethylenamine, grains forty-five to sixty daily, should be given for its antiseptic action upon the biliary passages. If medicinal treatment is not controlling the attack, surgery should not be too long delayed.—N. Y. Med. Jour., April 18, 1914.

Prescriptions

Cholera Morbus:

In the later stages of an attack Wilcox recommends the following:

Acidi Sulphurici Aromat.....mxvj
Ext. Hæmatoxylon.....mxvj
Spt. Chloroformi.....mxxij
Fl. Ext. Ipecacuanhæ.....mviij
Syrupi Zingiberis.....ad. f. ʒj

M. Sig.: One dose every two hours.

Uterine Atony:

Euquininæ.....grn. xxxviij
Ergotinæ.....grn. xxx
Strychninæ Sulphatis.....grn. ⅔

M. Div. in pil. No. xx.
Sig.: Three to four pills daily.

Relaxed Uvula:

When uvula is inflamed or congested the following may be used as a gargle every two or three hours:

Ichthyolis.....f. ʒij
Glycerini.....f. ʒij
Aquæ Menthæ Pip.....f. ʒx.

Chronic Gastro-enteritis:

Ichthoform.....
Sodii Bicarbonatis.....āā f. ʒijss
Saccharini.....grn. ¼
Olei Cinnamomi.....gt. j

M. Div. in chart. No. xx.
Sig.: One powder 3 or 4 times daily, after meals.

Elephantiasis:

Ichthyolis.....f. ʒj
Olei Chaulmoograe.....f. ʒij
Lanum.....ʒj
Hydrargyri Oleati (20%).....ʒj

M. Sig.: Apply freely externally and bandage firmly

Chloasma:

Hydrargyri Chlorid. Corrosivi...grn. vj
Acidi Acetici Dil.....f. ʒij
Sodii Boratis.....grn. xl.
Aquæ Rosæ.....f. ʒiv

M. Sig.: Lotion. Apply twice daily.

—Bulkley.

Earache:

J. F. Crump recommends the following anodyne for instillation in earache in children. Five drops are to be instilled every three hours:

Atropinæ Sulphatis.....grn. ¼
Cocainæ Hydrochloridi.....
Phenolis.....āā grn. v
Epinephrin (1:1,000).....ʒj
Glycerini.....ʒiv

M. et ft. solutio.

Ingrowing Toe-Nail:

Good results in the treatment of ingrowing toenail may be obtained by dusting the affected part with a little powdered lead nitrate, after careful cleansing. A white scab forms, which must be removed on the following day; otherwise, pus is liable to collect underneath, the dusting being then repeated. The same treatment is followed from day to day as long as necessary. Liesching has been using this method for many years, with satisfactory results.

—Liesching.

Weeping Erythematous Eczema:

When occurring on the face there is usually much edema of the loose tissue in the infraorbital region, so the condition may be mistaken for erysipelas. Avoid greasy applications and use wet dressings soaked in normal saline. The following lotion will relieve the irritation and smarting:

Calaminæ.....ʒij
Zinci Oxidi.....ʒj
Glycerini.....ʒss
Liquoris Calcis.....ad ʒvj

M. et ft. lotio.

When the exudation has ceased one may use a powder of the oleopalmitate of zinc, mixed with one-half its weight of powdered starch, or the following cream:

Zinci Oxidi.....ʒj
Adipis Lanæ.....ʒij
Olei Olivæ.....
Liq. Calcis.....āā partes æqualis ad ʒiv

M. et ft. cremor

—Canadian Lancet.

Emphysema:

Potassii Iodidi.....grn. v
Morph. Sulphatis.....grn. ¼
Tr. Belladonnæ Foliorum.....mxv
Spt. Aetheris Comp.....mxlv.
Aquæ.....q. s. ad ʒij

M. Sig.: Two drams p. r. n.

The A. B. C. diuretic:—

Potassii Acetatis.....
Potassi Bicarbonatis.....
Potassii Citratis.....āā grn. xv
Infusi Digitalis Recentis.....ad ʒij

M. Sig.: Take 2 fluid drams every three to four hours.

Fl. Ext. Quebrach.....
Tr. Stramonii.....āā ʒij
Vini Antimonii.....mxviij
Syrupi Grindeliæ.....ʒj
Syrupi Senegæ.....ʒss
Syrupi Tolutani.....ad ʒiv

M. Sig.: One dram t. i. d.

Pulv. Stramonii.....ʒj
Pulv. Cascarillæ Cort.....ʒij
Potassii Nitratis.....
Pulv. Ipecacuanhæ.....āā ʒss

M. Sig.: Dry thoroughly. To be burned and the smoke inhaled during the attack.

—Critic and Guide.

Scabies:

Balsam of Peru, combined with sulphur, gives good results in the treatment of scabies. Montgomery recommends the following ointment:—

Sulphuris Præcip.....
Balsami Peruviani.....āā ʒiij
Adipis Lanæ Hydrosi.....
Petrolati.....āā ʒiss

M. Sig.: Use externally.

—Calif. State Jour. of Med.

Nasal Catarrh:

The following has been well tried and gives excellent results:—

Olei Pini Sylvestris.....
Terebeni.....aa ʒij
Creosoti.....
Mentholis.....aa ʒss
Olei Cinnamomi.....mx
Olei Eucalypti.....ad ʒj

M. Sig.: Sprinkle a few drops on a handkerchief or cotton-wool and inhale through each nostril separately, or put a teaspoonful into a pint of boiling water and inhale the vapors.

—Jour. Med. Soc. of N. J.

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MAY, 1914

EDITOR'S NOTES

Luminal in Epilepsy

IN the symptom complex of epilepsy, the convulsions play the most important rôle since they form the most prominent antisocial factor. Indeed, a large percentage of patients present little or no psychic degeneration and are in institutions solely owing to their convulsions. The therapeutic effect of the bromides cannot be disputed. There are, however, many disagreeable after-effects and in many cases, the attacks are merely reduced in frequency and intensity.

W. Fuchs (Muench med. Woch., April 21, 1914) has employed the new drug luminal for a number of months and has been very much satisfied with the results he has obtained. Lummal is closely related to veronal but differs from it in that it possesses a phenyl group. This drug again demonstrates that a slight change in chemical composition will give rise to a pronounced variation in physiological effect.

All in all, about 30 cases of genuine epilepsy have been treated by the author with luminal. The drug was always given by mouth, usually in tablet form.

The author writes that small doses are usually preferable. As a rule, in epilepsy a 5 grn. tablet given in the evening will have the desired effect. In many cases, it is better to give this quantity in two doses morning and evening. Every patient must be tested out; thus in some more, in others, less will be necessary. As some cases are oversensitive to its effects it is advisable always to begin with small doses, say 1¼ grn. three times daily. In a few cases the author found it best to give larger initial doses, say 5 grn. the first evening, 2½ grn. the following morning and then 1¼ grn. three times a day.

The specific effect of luminal is manifested with small doses, the intensity of the effect, however, depends upon the amount. In all cases, the bromides were discontinued.

The most pronounced after-effect is sleepiness, which becomes very evident even after 2½ grn. given twice daily. This sleepiness is subjectively agreeable and never causes refusal of the drug. Usually 8 to 14 days elapse before the system become accustomed to the drug and during this period a certain degree of intoxication may be present.

One patient died while under treatment but careful consideration leads the author to conclude that the drug was not responsible. The case was an exceptionally severe one with progressive imbecility and a tendency toward status epilepticus. The bromides were discontinued owing to severe dermatosis, whereupon the epileptic seizures became so frequent that the patient was given up. Luminal in doses of 5 grn. twice daily checked the attacks completely but death set in three weeks later. The remarkable feature is that even in so advanced and severe a case, luminal had so marked an effect upon the attacks.

Only about 20 of the 30 cases have been observed for a sufficiently long time but in virtually all, the effect was all that could be desired. Rarely, the type of grand mal changes to petit mal and sometimes an attack comes on after months quite unexpectedly despite continued medication. When the luminal is discontinued, the attacks recur, showing that the drug merely acts symptomatically and is in no sense a cure. Frequently the attacks then come on with greater severity but the bromides may be used prophylactically with good success for some time before the luminal is withdrawn.

Unfortunately, the effect on the epileptic character is less pronounced. A certain percentage of cases, however, became less antisocial in their demeanor and generally more tractable.

Large doses should be avoided, thus after 10 grn. there may be cyanosis with small pulse and Cheyne-Stokes breathing showing that the medulla oblongata may be affected as well as the centers in the cortex.

An attempt was made by the author to lay down strict indications for the use of luminal. The most suitable cases are the typical ones with regular, chiefly nocturnal attacks with a tendency to real epileptic psychoses. The treatment was most successful where the disease did not date further back than puberty and where the general condition of the patients was good. The prognosis was also good where there was intolerance toward alcohol and where the bromides readily caused acne. The presence of a hereditary taint was of little consequence. Less favorable results were obtained in the atypical cases, where the disease dates back to childhood or in degenerates with skull measurements considerable below the normal. Psychical improvement is most likely in the classical morbus-sacer types. At present, one cannot recommend the drug for every case where the diagnosis epilepsy has been made but the advantage is that an effect, if it occurs, will be apparent in a few days or even hours.

Further experiments are necessary to determine the effect of luminal in strychnine poisoning, experimental epilepsy, trismus and tetanus. It would also be interesting to determine if the drug exerts any influence on proteolysis in the blood-serum.

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Treatment of Excessive Menstruation

It is a well-known fact that many young women menstruate excessively, yet that no pathological lesions can be found to explain the condition. Even where an autopsy could be made, the microscopic examination of the tissues may not explain the condition. Treatment other than by castration has always been unsatisfactory until the Röntgen rays were applied, but with these there is always danger of sterility. E. Sehrt has carefully examined a number of cases of this type and has found signs of hypothyroidism in a large percentage. He therefore recommends treatment with the active constituent of the thyroid gland and has seen some remarkable results. It is impossible to state the average dose as this varies for every case. The blood should be examined every eight to fourteen days until the specific signs of hypothyroidism have disappeared. In a few cases, the first doses caused palpitation, headache and nausea, but in the majority, the general condition improved very materially. In not a few cases the nervousness and spastic constipation were also corrected.—Muench Med. Woch., Feb. 10, 1914.

Bactericidal Action of Perhydrit

Perbydrit is the name applied to a solid preparation of hydrogen peroxide which exhibits very pronounced bactericidal properties even at room temperature. Thus a 5 per cent. solution will destroy all pathogenic organisms within five minutes. The more resistant bacillus subtilis is killed within fifteen minutes. Higher temperatures will considerably enhance the effect, thus at 35° C. the hay bacillus will be rendered harmless in five minutes. Soda solution will increase, sulphuric acid diminish the effect. The presence of salt or soap will have little influence. In disinfecting the skin, absolute sterility cannot be obtained, according to E. Ungermann, yet a 3 to 5 per cent. solution will remove all germs from the hands of surgeons which might give rise to an infection. The preparation is also destined to play an important role in the disinfection of the oral cavity. Its keeping qualities are good if not exposed to the air for any length of time.—Hyg. Rundschau, 1913, 19.

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Treatment of Scabies in Children

Gaston, in "Paris médical" for August 30, 1913, per "N. Y. Med. Jour.," is credited with the following combination to be employed in washing the child in the evening:

Saponis Castilienesis	℥ivss
Potassii Sulphidi	℥ii
Olei Olivæ	℥iss
Olei Thymi	♏xiii

Misce.

Potassium carbonate, two and one-half to five drams, should be added to the bath. After the bath the skin may be rubbed with a mixture of dilute camphorated oil, styrax and balsam of Peru.

On succeeding days the following ointment should be rubbed in.

Sulphuris Præcipitati	grn. xv
Sodii Boratis	℥ss
Zinci Oxidi	℥iiss
Adipis Lanæ Hydrosi	
Petrolati	āā ℥ss

M. et ft. unguentum.

A starch bath should also be administered daily.

Where, as is frequently the case, scabies results in the production of eczema or impetigo, these may be treated by the application of balsam of Peru in oil (5 to 10 per cent.) or by the following ointment:

Sulphuris Præcipitati	
Glyceriti Amyli	āā ℥vi
Olei Cadini	♏lxxx
Sodii Carbonatis	℥ss

M. et ft. unguentum.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

The Pancreas Toxicosis.—The subject of Abderhalden's reaction of proteolytic disintegration—caused by the entrance into the blood of organic substances of a more or less alien character, which are disposed of through digestion by enzymes, either pre-existent in the blood or generated for the occasion—has naturally developed a new pathology. Let us suppose that the pancreas becomes the seat of an acute inflammation and rapid necrosis. Then the entrance into the blood of the products of autolysis of the gland causes phenomena which are closely associated with the symptoms which follow the abolition of its function. Severe as are the latter, they cannot be compared with the results of absorption of toxic material, which naturally occurs at an earlier period. Von Bergmann and Strauch have for many years studied pancreatic autolysis in necrosis following acute pancreatitis and have found that fatal poisoning rapidly occurs in certain cases. In a paper read before the Medical Union of Hamburg on Dec. 16, 1913, they announce the results of attempts to study the affection with Abderhalden's reaction, especially when only suspicion exists as to a latent state (in sufficiently obvious cases such a resource is not indicated.) The authors do no more than state that a positive Abderhalden is of much value in such cases. In a long discussion on Aberhalden's reaction in general, which took place afterwards, no mention whatever was made of the pancreas, so that the authors are, no doubt, pioneers in this subject.—Med. Record.

Medicine a Function of the State.—Arthur Dean Bevan, Chicago, presents the progress which has been made during nine years toward raising medical education to the standard formulated by the Council on Medical Education, in 1905, and shows the improvements which have resulted in all medical schools. As medicine has become an important function of the state he favors state rather than private support of medical schools in the interest of the people as a whole and shows the large extent to which in foreign countries and the United States the medical schools are under the aid and control of the state. He pleads for a national board of health and gives the benefits which would result from the creation of enlightened public opinion on matters of public health through the efforts of such a board.—Jour. A. M. A.

The influence of the Thyroid Glands on Pregnancy.—Thompson (Surgery, Gynaecology, and Obstetrics, Aug., 1913) discusses the relation which the thyroid glands bear to gestation, and records the history of a patient in which partial thyroidectomy was performed during the early months of gestation. The patient had a hypertrophied thyroid, but exhibited no symptoms of thyroidism. Half of the organ was excised, and subsequently the uterus decreased in size until it was almost normal, and of the same consistency as a non-pregnant organ. No history of bleeding was given, and later, when curetted, only some atrophied decidua and villi were removed. Six months later the patient again became pregnant. The remaining portion of thyroid was much enlarged until the fourth month. Gestation continued to term, and was followed by a normal labor. The thyroid then subsided. Thompson concludes his paper with a critical review upon the important literature on the subject, and observes that there is abundant clinical evidence in support of the theory that what is termed a physiological hyperactivity of the thyroid is a valuable safeguard against the toxemia of pregnancy. He also notes that there is both clinical and experimental evidence to show that the gland has a direct connection with the sexual system of man and higher mammals through its secretions. Thus a lack of thyroid secretion influences sexual activity adversely. On the other hand, sexual activity, whether physiological or pathological, causes a hyperactivity of the thyroid. Finally, this hyperthyroidism constitutes an index to the toxemia of pregnancy, to counteract which the thyroids raise their antitoxic protective power.—Brit. Med. Jour.

Physique and Success.—The physical basis of success has been strangely neglected in medical literature, yet one has only to attend a meeting of successful doctors to be convinced that preeminence is largely conditioned by the possession of a physique which can stand the dreadful strains. Of course there must be brains to start with and these must be trained, but it does seem that a big powerful physique has been a deciding factor in the case of many successful physicians and particularly of the surgeons. This is not to say that a frail student short of stature must not aspire to leadership in surgery if he finds that his mental equipment is dragging him that way. Many men have attained eminence in every walk of life in spite of physical handicaps which would prevent the mediocre from ever making the effort. To a large extent in surgery it is the survival of the fittest, as the unfit drop out and those left seem to have a remarkably high average of muscular strength, stature and brains. What is more important perhaps, is the life of almost cloistered austerity which many a surgeon is compelled to lead in order to preserve the steadiness of muscle and mental keenness so necessary in delicate operations. The world will never know the elaborate grooming some find necessary—a professional beauty could not be more careful. Nor will the world ever know the personal privations necessary, such as the omission of amusements and social affairs which seem part of man's necessities. As for any excesses, it is a matter of common knowledge that they destroy good surgery and even life itself. All medical colleges make a point of giving some special instruction on the kind of personal hygiene necessary for success, but from the way such advice is ignored, it is not given in a convincing way, or perhaps most of us think that without some self-indulgence life is not worth living. We often wonder how long it takes a surgeon to recover from the effects of the tobacco smoke which fills the rooms at meetings he must attend. We would like to mention the rather handsome appearance of many a surgeon, but in case such a remark might lead the unhandsome to an undue self-appreciation, let us add that good health frequently masquerades as good looks.—American Medicine.

Acute flexion is the best position in which to dress elbow fractures through the humerus. Care must be taken, of course, to avoid skin decubites and obliteration of the radial pulse. *Early* passive motion is highly important.—Amer. Jour. Surg.

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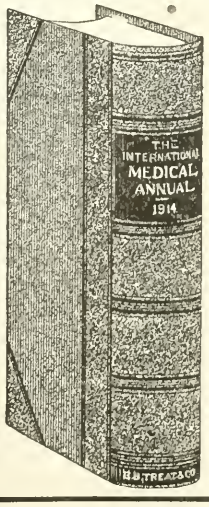

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Miscellany

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MENTAL HEALING.—J. V. Haberman, of New York, protests against the neglect by the medical profession and medical instructors in regard to the influence of the mind on the body. It has taken the physician too long to recognize the facts that the public mind is very open to anything bearing on this subject, hence the religious cults and the vast amount of literature in the public press and otherwise. Those who are attracted to these ideas run in number up to vast thousands, and are active prosolyters of others. The physician has kept his eyes too closely on the disease, its physical and laboratory study, but it does not always respond to treatment and there are hosts of conditions which become protracted as attention is called to them. We have too much forgotten that we are dealing with individuals and have considered the mind so impalpable that it could be left to the metaphysician and the quack.—Exchange.

ELASTIC SKIN.—This condition is almost hopelessly confounded in the clinic with cutis laxa, essential hypertrophy of the skin, and numerous other conditions, so that any attempt to isolate merely resilient normal integument should be welcome. One seeks a physiological and not an anatomical anomaly. At a meeting of the Strassburg Society of Military Surgeons, Mentberger described a case of extensible and resilient skin in a healthy young man. When the integument of the arm, neck, etc., was pinched up into folds there was an immediate return of the parts to their normal position as soon as the elastic fibers were permitted to resume their activity. This type of skin is normal in puppies, kittens, and anthropoid apes. Sections of skin show under the microscope no increase in elastic fibers. It is said, however, that the derma in these cases is myxomatous rather than fibromatous—a colloidal, formless tissue. The condition appears to represent a persistence of the embryonal state, and this is further borne out by the occasional familial incidence of cutis elastica.—Med. Record.

A REMEDY FOR DEPOPULATION.—Among the remedies that have been suggested for the depopulation of France, which is becoming more and more acute, have been several affecting the disposal of property. One proposal is that every estate should be divided at least into four parts, those not going to children being confiscated by the state; another is complete exemption of large families from taxation. Another suggestion of a different kind, which, though much less drastic, would probably be much more effectual, has recently been made. This is to incorporate in the scheme of electoral reform now under discussion the principle that every living French citizen should be represented, including women and children. While waiting for female suffrage every head of a family should have as many votes as he represents persons—one if he is a bachelor; two if married without children; three, four, five, etc., if he has one, two, three children, who do not themselves vote. This seems logical, and would give men who do not shirk their duty as citizens a plural vote, which would have to be reckoned with. Fathers of families would no longer be crushed as they now are under military burdens proportionate to the number of their children, and under taxes on food and houses, which increase with the number of little mouths there are to fill. At every turn of legislation—fiscal successional, military—the influence of big families would come into play, because they would be effectually represented and defended, and because they would count at the poll, and therefore could not be neglected by politicians out to catch votes. The force of the big family may thus become a lever which by continual movements would adjust the balance of political power, and the result might be a gradual modification of the mentality of a people which has no longer the wish to reproduce itself, and in this way is manifestly tending to national extinction.—Brit. Med. Jour.

THE AUTOPSY OF A RADIOLOGIST.—In the April number of the *Archives of the Röntgen Ray* there is a detailed account of a *post-mortem* examination of the body of Dr. Emilio Tiraboschi, who was for fourteen years radiologist of the Ospedale Maggiore of Bergamo. It is taken from a report published in *Radiologia Medica* for February by his colleagues, Drs. Cavazzeni and Minelli. Dr. Tiraboschi was in the habit of using a very hard focus tube, and took little care for his own protection. For some years he had suffered from slight radio-dermatitis, with pigmentation on the left hand and left side of the face. He complained of some loss of strength, followed three years ago by a serious nervous breakdown, which kept him from his work for six months; his nutrition continued good, the only change being a gradually increasing pallor and annemia. He continued his radiological work up to the eve of his death, the only additional symptom being some oozing of blood from the gums. The lesions on the face and hand were slight. The spleen was of small size and somewhat hardened. Both testicles were shrunk to the size of filbert nuts, the parenchyma being soft and of a yellow color. The cause of death seemed to be a profound essential anemia. The medulla of the ribs was carefully examined. There was a great scarcity of normoblasts, complete absence of megaloblasts, with a few red globules more or less deformed; megalocytes exceptional, polynuclear leucocytes less than normal; excess of lymphocytes with large nucleus; scarcity of myelocytes, with very rare cosinophile cells. The spleen showed an abundance of globular and pigment cells, evidence of the far-reaching destruction of the circulatory fluids. Most of the Malpighian follicles were destroyed, with considerable invasion of connective tissue. The histological examination of the testicle was of particular interest. It showed pronounced atrophy of the epithelial cells of the seminiferous canaliculi. It was impossible to distinguish the various cellular elements, and there was little or no evidence of karyokinesis. The basal membrane of the canaliculi was enormously thickened by proliferating connective tissue, which compressed and destroyed the glandular tissue. The whole of the epididymis was also invaded by connective tissue. From this account it will be seen that the local affection was slight and was confined to the left hand and cheek, which were turned towards the tube. Unknown to himself and his colleagues,

however, the unfortunate radiographer was being slowly poisoned by the "radio-lymph" of his own tissues. The grave pernicious anemia to which he succumbed was the direct result of the absorption of the ionization products of the tissues most sensible to the *x* rays—namely, the testicles, the osseous medulla, and the spleen. The dying man worked on to the end unconscious of the gravity of his condition. By the irony of fate, says our contemporary, "a box of Blaud's pills was found by his bedside."—Brit. Med. Jour.

Brooding on Death.—Morbid brooding on death and its accompaniments was a characteristic of many members of the house of Hapsburg, especially the Spanish branch. They loved to "talk of graves and worms and epitaphs," and to "tell sad stories of the deaths of kings." Dr. Paul R. Mersey has studied the manifestations of this peculiarity in the light of modern psychiatry, and with the help of historical documents discovered during the last fifty years. In the Journal of April 19, 1913, an account was given of the mad queen known in Spanish history as Juana la Loca, who carried about the dead body of her husband, Philip the Fair, from place to place. Dr. Mersey has sought among her descendants for similar manifestations, limiting his research to the direct branch of the Spanish Hapsburgs, which died out with Charles II in 1700. In almost all of them he found a love of the subject of death, a haunting of the grave and delight in funeral ceremonies, which he calls "thanatophilia." Joan's son, the Emperor Charles V, during the last years of his life, took a strange pleasure in being present at funeral obsequies. From 1555 he passed whole hours in his room, which was draped with black and lit with seven torches, meditating on the death of his mother. He thought he heard a voice bidding him follow her. This is all the more strange since he showed little affection for his mother when she was alive. He had funeral services held for his father, his mother, and the empress, which he followed very devoutly. His own obsequies were celebrated with great pomp in his lifetime, all his servants being in deep mourning; he himself, clad in black, with a candle in his hand, took part in the ceremonies. Soon afterwards he died. Philip II was never so vigorous as his father, the Emperor Charles V, had been during some years. He was short, his limbs were frail, and he was a chronic invalid. During the greater part of his life, death was his favorite subject of conversation, and he never missed an opportunity of attending a funeral service. The Escorial which he built is a testimony of his mortuary tastes, for it is before all a burial place intended as a monument to the descendants of the house of Austria. He passed the last years of his life there, shut up in a room in a corner of which was his coffin. He arranged all the details of his own funeral. Margaret of Austria, wife of Philip III, who died at the age of 26 of puerperal fever, was also haunted by ideas of death to a degree beyond even most of the members of her family. She was the great-granddaughter of the mad Joan. She would say that she knew her life would be short, and spoke with complacency of the hour of her departure. A few days before her last confinement she went with the king to the Escorial, where, among the bodies of departed kings, she selected a place for herself. Even after her confinement, which passed off well, since she continued without bad symptoms for about four days, she declared that she would not live a week longer, and this came true. Philip IV had his own coffin made before his death, and insisted on lying in it to see whether it fitted. It was under his reign that the Escorial was completed, and on March 16, 1654, he had transported thither the bodies of the kings and queens of his dynasty with ceremonies arranged by himself. King Charles II was weak in body and in mind. He may be said never to have grown up, and he spent his life practically doing nothing. But he often visited the Escorial and looked at the coffins of his ancestors, and at that prepared for himself. Death became his sole preoccupation. His sister, Marie Therèse, when asked by Anne of Austria what she thought of her reception at the Louvre on the occasion of her marriage to Louis XIV, said: "I think of that other ceremony when one day I shall be carried to the vaults of St. Denis." This morbid brooding on death descended from Joan the Mad through five generations. Another case not included in the present study is that of Maria Theresa, wife of Francis I, Emperor of Germany. He died in 1765 and she survived him fifteen years, during which time she constantly went down into the imperial vaults to mourn for her husband, and devoted an entire month each year to the celebration of the anniversary of his death. She had her own coffin made secretly and wove her shroud with her own hands. The close intermarriage in the family should be noted. Charles V married his first cousin, Philip II his cousin Maria, by whom he had Don Carlos, and then his niece Anne, by whom he had his successor. Philip III married his cousin in the second degree, Philip IV his niece, by whom he had Charles II. Consanguinity raises heredity to its highest power. There was distinct madness in Joan and in Charles II. In the others, though not mad, there was a family psychosis showing itself in thanatophilia.—Brit. Med. Jour.

Experimental Implantation of the Generative Glands.—An interesting experiment which, it is hoped, may ultimately prove as successful as its benefits would prove far reaching, was recently begun by G. Frank Lydston (Bulletin of the Chicago Medical Society, March 7, 1914) to elucidate the following questions: The therapeutic value of generative gland implantation, the kind of dead subjects most suitable as donors, and the value for implantation work of frozen glands, Carrel's labors being duly recognized. As to the disorders which would probably be benefited by the procedure, they would include dementia præcox, impotence and

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sterility, psychopathia sexualis, certain chronic diseases of the skin, the disturbances incident upon artificial or physiological menopause, sex mutilations, and precocious senility.

The organs employed were a testis taken from a suicide eighteen years of age who had been dead seveteen hours, and the ovaries of a girl who had died of violence twelve hours earlier. The testis was implanted into the experimenter's own spermatic cord within the scrotal sac, his associate, Dr. Carl Michel, assisting. On the eighth day after the operation one-half of the implanted gland was removed; it was found to have become fixed by distinct and firm vascular adhesions. A fistula, which formed where the segment of gland had been removed, permitted the passage of a mucosanious secretion in which immature spermatozoa were found. The ovarian implantation was carried out in a woman fifty-nine years of age who was suffering from the effects of total removal of the uterine appendages. One of the ovaries was implanted in the patient's left labium majus. While the wound healed kindly, it is as yet too early in this, as in the first case, to predict results.

While expressing the hope that the experiment may prove successful, we cannot but recall the results recorded by Carrel and Guthrie in respect mainly to kidney implantation in the cat. Though the animal recovers and even secretes urine normal in amount and composition, the exogenous nature of the grafted organ soon asserts itself through its inability to carry on the function, and the animal dies in about three weeks. Transplantation of an animal's own kidneys, however, enables it to live two years in normal health. This and other experiments have shown that transplantation of an exogenous organ, even from a healthy donor, cannot be performed successfully, at least in the light of present knowledge and with available technic. Such experiments as Doctor Lydston's are invaluable, however, in that they may, even if it be by chance, as is often the case in science, furnish some clue undiscovered by his predecessors which will ultimately insure success.—N. Y. Med. Jour.

Adrenal Glycosuria in Man.—Since it is becoming more evident that the conspicuous vasomotor properties of extracts of the adrenals cannot be regarded as exemplifying a continuous influence exerted by these organs in the normal individual, attention is being directed to other functions exerted by them. The analogy between the action of epinephrin and that which occurs on stimulation of the sympathetic nervous system suggests possible non-circulatory effects of the adrenal secretion. Even more promising, however, for the interpretation of unsuspected activities of these ductless glands is the discovery by Blum, in 1901, that extracts of the adrenals may provoke a typical glycosuria. This fact has been abundantly verified on various species of animals, and the details of the mechanism involved have been subjected to experimental analysis. In a general way it appears that the injection of adrenal extracts, or the epinephrin isolated therefrom, leads to a "mobilizing" of glycogen—a rapid contribution of sugar to the blood with a consequent glycosuria. Just as after the discovery of the vasomotor properties of adrenal extracts the conclusion was promptly drawn that the glands regulate vasomotor tone by pouring out more or less of their active principle, epinephrin, into the circulation, so the glycosuria-producing effects of injected epinephrin have become the subject of hypothesis with regard to the metabolism of sugar in the body. The adrenals were looked on by the earlier enthusiasts in this field as constantly regulating the level of sugar in the blood, more or less epinephrin being "secreted" into the circulation to produce a prompt conversion of stored glycogen to meet the changing needs of the organism. We have already pointed out how cautious one must be at present in ascribing too general functions to the adrenal bodies. It is probably as premature to assume that *normally* they exert a continuous regulatory influence on the carbohydrate metabolism of the organism as it was to assert that they are continually supplying epinephrin to the circulation in order to maintain the *normal* vasomotor tone. This need not minimize the possible efficacy of the glands on other than ordinary physiologic occasions. It is now to be determined under precisely what circumstances and emergencies the adrenals are called on to contribute their potent product. Inasmuch as it can no longer be questioned that, under some circumstances at any rate, the carbohydrate-mobilizing capacities of adrenals come into play in the animal organism, it is of added importance to substantiate such possibilities in man as well. This is always a step in the perfection of scientific discoveries in the domain of animal physiology. Landau has furnished the desired proof. He notes that when 156 Gm. (five ounces) of glucose are fed to man the sugar-content of the blood is raised, but ordinarily not to the point that calls forth glycosuria. If, however, a subcutaneous injection of epinephrin is made when the glucose is given, pronounced hyperglycemia and glycosuria put in their appearance. This is precisely what was to be expected from earlier experiences in the laboratory; but the clinician is not satisfied until the dicta of physiology are verified, as they have been in this instance, by direct evidence on man.—Jour. A. M. A.

Dangers of Excessive Formalism in the Preliminary Requirements for Medical Education.—In an address read before the recent Council on Medical Education in Chicago, President Lowell, of Harvard University, calls attention to certain possible dangers in the rigid inelastic preliminary requirements in medical education. The points he criticizes are embodied in the rules adopted March, 1913. These requirements are: One course each in physics, chemistry and biology with a prescribed number of lectures and appropriate laboratory work; also a couple of courses in German or French aggregating three or four hours a week for the year. He gives his own case as an illustration of the possibilities under these rules. When a child, he studied in France and he could read the language easily. He later took a course in German but did not learn to read it easily until later life. He says, therefore, that he might have qualified in German but not in French. A student in Harvard who does not pass an entrance examination in French and German is obliged to take an examination in the language he does not pass; a course equal to the above minimum required, and yet they find the student commonly unable to use foreign books. The prescribed rules criticized would by no means insure such ability while they may exclude a man who can. Though less strikingly evident the same thing is true of the scientific requirements. A college education, if it has any value in training the mind, must make men more capable in tackling difficult subjects and hence a better knowledge can be obtained of such in the senior year than in the

reshman year, though the latter is the thing equired in admission to the medical schools. The test by courses is inaccurate in that it lets n a certain number of unqualified men, but this s not the most serious matter. It is likely to xclude a number of excellent recruits who have ıot selected their courses in college with a view o a medical career. It is not altogether true hat a man can sttle on his career early in life. This is the case at least with college students. Any one can recall cases of eminent practitioners vho did not decide to enter medical school until oo late to comply with these rules. Lowell gives ome facts from the statistics of the graduates of he Harvard medical college which go far, he hinks, to show that a large amount of scientific preparation is not an essential and that a small mount is not always a hindrance to successful vork. The medical school should select men rom their standing in their college course so far s possible or according to their ability as shown otherwise. He does not plead for men with nadequate preparation but argues for that preparation which will be a real test of the man's nowledge, not merely of some special courses ıe has gone through—a test which will not, for failure to decide early on his career keep out he men of power.—Jour. A. M. A.

A Story and a Moral.—From the *Remedy* of he Persian poet Saadi, known also by the name of the *Bed of Roses*, the *Mercure de France* in a ecent number reproduces various passages trans-ated by Franz Toussaint. Among them is the ollowing: A man contracted a disease of the yes. He hastened to a veterinary surgeon and aid, "Give me a remedy." The "vet." instilled nto his eye a collyrium which he used for the eyes of animals, and the poor fellow became blind. The affair was taken before the Cadi, who gave udgment as follows: "The veterinary surgeon vill not be fined. If this patient had not been an ass he would not have consulted such a prac-itioner." Whereat, we suppose, there was aughter in court which was at once suppressed. We hope the judicial wit satisfied the plaintiff. The moral drawn from the story by Saadi is that an intelligent man does not entrust difficult tasks o an incompetent person. Although the maker of mats can weave, he is not considered fit to do delicate work in silk.—Brit. Med. Jour.

Mental Deficiency and Delinquency.—Olga Bridgman, of Lincoln, Ill., speaking from her observations of the inmates of the State Training School for Girls at Geneva, Ill., says that there is one great cause of female delinquency that has not received due clnsideration in the recent anti-vice movement, viz., mental deficiency. Most of the girls sent there were sent as purely delinquent; if it was seen that they were not exactly bright it was noted only as an incidental fact without bearing on the delinquency. Those received there were not all those coming before the courts, but were as a rule the more incorrigible offenders. Simple observation and daily work with these girls showed many to be quite irresponsible and incapable of doing the work of ordinary children, even after years of careful training. This led to the use of the Binet test, as modified by Dr. Goddard, as a routine measure with the new admissions. Of the total number examined, 89 per cent. were graded as feeble-minded, that is, they showed a retardation of three years or more, and only six, or 5 per cent., could be ranked as normal. Fourteen only had been committed as uncontrollable and not sexually immoral. By far the larger part of these delinquents are

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manageable under supervision, but left to themselves are a constant menace to society. Another smaller class are not passive victims but are imbecile nymphomaniacs, and a third very dangerous type is the moral imbecile, showing no mental defect by the Binet test. There were three apparently of this class and two of them showed themselves capable of being natural leaders, easily controlling their associates. Dr. Bridgman sums up as follows: 1. Of the 104 girls committed to Geneva as sexual delinquents, 101, or 97 per cent., were feeble-minded according to the Binet tests. This would seem to prove mental deficiency to be an important causative factor in the causation of sexual immorality and to indicate the routine employment of a mental examination for all children of this class in order to determine how far they can be held responsible. 2. Of the feeble-minded, comparatively few are aggressive sexual perverts, but most are helpless victims, who should have protection, and who, under close supervision, may lead useful, contented lives. 3. By no means all delinquent girls are feeble-minded, but probably those not amenable to supervision and direction in their own homes are largely so.—Jour. A. M. A.

Emergency Weights

For handy emergency weights, when no standard method of weighing is at hand, United States coins may be used. The following are near enough for all ordinary purposes:

Dime	40 grn.
Cent	50 grn.
Nickel	80 grn.
Quarter-dollar	100 grn.
Half-dollar	200 grn.
One Dollar	400 grn.

Aided by a little mental arithmetic, a great many different weights may be made with these coins.—Photo-Era.

Colds in Children.—T. S. Southworth, of New York, says that recent years' experience has taught him to respect the common infectious cold as far from a trivial affection. Its bacteriology is yet uncertain and we may have several organisms to contend with. Infants appear to be especially susceptible to these infections and when it invades a household it is likely to go through several members. In institutions where they care for children it spreads with great rapidity, and as sequels ear disease is common, pneumonia rather less so but not infrequent. The most frequent injury, however, is inflicted by their influence on nutrition, especially in bottle-fed infants. We are apt to look on these as colds when they are in reality systemic infections. Such colds are an unfortunate handicap in conducting feeding cases in private practice and digestive disturbances caused by them are common. The loss of weight leads the nurse or mother to overfeed the infant. Household infections are shown by recurring attacks during the colder months, and they may occur also in the warmer seasons. The amount of injury done to young children can scarcely be estimated, especially in oral and sinus complications. Traveling on trains, children's parties, dancing schools, etc., are frequent methods of exposure, and Southworth emphasizes the importance of this risk. In treating a case isolation is often difficult unless the child is confined to bed and this aid is lost during convalescence. He does not consider it, however, impracticable, and if parents could realize the greater danger from this cause they would enforce it, as they do in cases of the regularly recognized contagious diseases like diphtheria, scarlatina and even mumps and chicken-pox. It is a comparatively simple matter for the physician to acquaint the mother with the risks incurred and to advise her to keep those having the slightest cold from contact with the children. But Southworth knows of no text-book that teaches the danger of the common infectious cold and no medical school or health board which has taught or enforced precautions against this contagious disorder.—Jour. A. M. A.

A Safe and Effective Somnifacient.—A soporific agent of particular therapeutic worth and one especially indicated in women and children by reason of its freedom from danger and disagreeable after-effects is Pasadyne (Daniel).

Pasadyne is a concentrated tincture of Passiflora incarnata and has been prepared by the same firm for more than thirty-five years. This preparation will be found of reliable worth in all nervous states. A sample bottle may be had by addressing the laboratory of John B. Daniel, 34 Wall street, Atlanta, Ga.

Urinary Ninhydrin Reaction.—L. M. Warfield, of Milwaukee, Wis., had a series of unfavorable results with Abderhalden's reaction of the blood; it occurred to him that if there was a specific ferment in the blood-serum elaborated to split up the products driven from the placenta, especially syncytium, there should be also in the blood-waste such products of the metabolic activity of the growing fetus. These would have to leave the body by some route, and the most logical one was the urine. They should be peptones and amido-acids and should dialyze out and possibly be found by means of the ninhydrin reaction in the dialysate. "It was found that actually such in the case. At first urine and pieces of boiled placenta were placed in one dialyzer, and urine alone in a second dialyzer. No difference was noted in the color or reaction obtained with ninhydrin. Boiling the urine made no difference. Urine containing more than a trace of albumin boiled and filtered to clear of albumin and placed in the dialyzer showed in the reaction of the dialysate to ninhydrin no difference from the untreated specimen of urine." Seventeen cases were tested, four ot them twice, and every case of pregnancy reacted except one of only two months' duration. Control tests of healthy persons were made, all negative. At four and one-half months of pregnancy the ninhydrin test of the urine gives an intense blue color. Their results are given in tabulated form, and are offered as a lead for large obstetric clinics to follow.—Jour. A. M. A., Feb., 7, 1914.

Diet and Chloroform.—E. L. Opie and L. B. Alford, of St. Louis, remark on the destructive action of chloroform on the liver-cells and report experiments undertaken to determine if protein disintegration might be modified by diet. White rats were used, since preliminary experiments showed that the fatal dose of chloroform could be fairly accurately determined. Chloroform was diluted with two parts of paraffin oil and a dose approximately 0.2 Cc. per hundred Gm. of body-weight was found non-fatal. From 0.3 to 0.5 Cc. per hundred Gm. killed in four days: 0.6 to 0.7 in one day. Irregularities in the action of poison were occasionally observed. In the series recorded in the first table animals were given during four days (a) oats and cane-sugar, (b) meat alone or (c) beef-fat alone. Each diet

maintained the average body-weight and the animals that received carbohydrates survived, while those that received meat and fat died. A second series demonstrated marked differences with the different diets when smaller doses of chloroform were given. The protective action of carbohydrates was conspicuously shown. The authors sum up their conclusions as follows: "The experiments furnish evidence that fat administered to animals and presumably stored in part in the liver increase the susceptibility of the organ to the injurious action of chloroform. In view of the well-known solubility and diffusibility of chloroform in fats, they suggest that the fat of the liver-cell determines the fixation of chloroform and occurrence of necrosis. The experiments with carbohydrates, on the contrary, furnish confirmation of the views of those (as Coleman and Shaffer for typhoid fever) who maintain that carbohydrates protect the body proteins from disintegration. Since necrosis of the liver with a variety of conditions in man, namely, toxemia of pregnancy, certain severe bacterial infections notably with *Streptococcus pyogenes* and *Bacillus coli*, acute yellow atrophy of the liver and yellow fever, and poisoning with a variety of substances, exhibits close similarity to the necrosis of chloroform, the foregoing experiments suggest that a carbohydrate diet may be found to influence favorably the course of these diseases, whereas fat may have grave danger."—Jour. A. M. A.

Economy of Matrimony.

"I'm introducing a brand new invention—a combined talking machine, carpet sweeper, and letter opener," said the agent, stepping briskly into the office.

"Got one already," answered the proprietor. "I'm married."

Scoliosis and Hypothyroidism.—J. Gourdon and H. Dijonneau draw attention to the importance of a careful study of the general health in cases of scoliosis; it is of course generally recognized that tonic treatment is needed in the early stage, but it is still true that in later stages the surgeon may fall into the error of devoting all his energies to the attempt to straighten the spine, and to correct paravertebral deformities. The writers have examined forty-eight cases of hypothyroidism, the patients ranging in age from eight to twenty years; out of these twenty showed a virtually normal skeletal development; out of the remainder twelve showed arrest of growth and subsidence of the trunk; eleven were scoliotic, four kypho-scoliotic, and one showed thoracic contraction. All these patients showed most of the signs of hypothyroidism described by Lévy and Rothchild—as a rule the limbs were well developed, but the growth of the trunk was defective, with osseous denutrition and muscular atrophy. Some showed generalized adiposity, but the majority showed local adiposities, especially of the upper and outer part of the arm or thigh, the abdomen, or the buttocks; in these regions the tissues were lardaceous and the skin cold and purple, while the neighboring parts retained their suppleness and normal temperature; the hair was dry and brittle, the eyebrows thin and sometimes absent at their outer extremity. All the patients were apathetic, complained of constant fatigue, and had pains in the back and lower limbs; in girls amenorrhoea was the rule. The scoliosis was always preceded and accompanied by a settling of the spine. Full particulars are given of 5 cases treated by fresh thyroid juice; all were cured in a few weeks' time after the previous failure of exclusively mechanical treatment. The writers refer at some length to many points in the physiology of the thyroid body which have been brought out by experiments. The thyroid has both trophic and antitoxic functions; it has also an important influence on calcium equilibrium; thus, thyroidectomized animals can be kept alive by calcium salts. Hypothyroidism can lead to a diminution of the resistance of the vertebral column, partly by causing defective functioning of calcium exchanges, and partly by the suppression of a normal barrier to infection (the internal secretion of the thyroid body). Gourdon has shown previously that faulty attitudes adopted during childhood and adolescence have no influence on the bones of the trunk unless their resistance be defective, as in predisposed subjects; when hypothyroidism is present during childhood this resistance is diminished, and the spine becomes softened. Carnot recorded a case of a fractured bone in a rickety patient which showed no trace of consolidation after sixty days; thyroid treatment was then begun, and fifteen days later consolidation was perfect; and yet only 3 grams of fresh thyroid were given in all. The writers found that the stature of their scoliotic patients began to increase from the time when thyroid treatment was adopted: their best results were obtained by the use of a glycerinated thyroid juice in the fresh state, combined with the usual orthopaedic measures. The beneficial changes wrought in the appearance, health, mental state, and growth of their patients under this régime are well brought out in the case-histories given.—Brit. Med. Jour.

Fleas and the Plague in the Bible.—When Moses, for the second time, promulgated the laws for the guidance of Israel, he said, should they disobey after possessing the promised land of the heathen Canaanites (Deut. xxviii, 27): "The Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, whereof thou canst be healed." Then, after the Israelites had established themselves but wickedness became rampant, they lost the protecting ark of the covenant to the Philistines, a people steeped in vices and lecherous practices; but who also had achieved to the Assyrian civilization.

Now, when the Philistines deposited the sacred ark in their temple of Dagon, we are told in I Samuel, v, 6, that "the Lord . . . . smote them with emerods," and destroyed those dealing with the ark. In their terror, the Philistines now carried the ark to Gath; whereupon (I Sam. v, 9) the Lord "smote the men of the city . . . . and they had emerods in their secret parts." Becoming panicstricken, the ark at last was returned to the Israelites, because sickness and death followed wherever it rested, and (I Sam. v, 12) "the men that died not were smitten with emerods."

For ten months the ark was among the Philistines, housed in various cities; then, when it was resolved to get rid of this death-dealing prize of war, the priests counseled that they send along with it a "trespass offering" for the god whom they had offended, and advised (I Sam. vi, 4) that this should consist in five golden mice and five golden emerods, saying (I Sam. vi, 5): "Wherefore ye shall make images of your emerods and images of your mice that mar the land . . . . peradventure he will lighten his hand from off you." The ark was then restored at Beth-shemesh.

However, the trouble did not end there; for (I Sam. vi, 19) the Lord "smote the men of Bethshemesh, because they had looked into the ark of the Lord, even he smote of the people fifty thousand and threescore and ten men."

The foregoing citations from ancient history acquire a certain amount of interest in the light of the recent discoveries about the role played by insects and other creatures of the animal world in the dissemination of diseases of various kind; and the passages cited from the Old Testament are presented here because of a theory promulgated not long ago by Sir Havelock Charles, as expressed in a British contemporary. It will be observed that the translators have taken over the appellation emerod, the meaning of which had remained a puzzle to Bible students.

Now, however, Sir Havelock Charles comes forward and suggests the ingenious—and withall plausible—idea that emerods signifies fleas. Then he goes on and speculates something like this:

A plague was ravishing the land of the Philistines, and, from the account, we may safely assume that the wise men had learned to associate it with rats and fleas, exactly as we in this late day have discovered for the bubonic plague. The temple of Dagon, like all other habitations (of those countries), was infested with mice and rats (which often are not distinguished) harboring plague-bearing fleas. The ark itself was covered with badger-skin (Exod. xxxvii, 19), consequently would serve to attract and hide numbers of infectious fleas.

Thus, as the ark was carried from city to city, the plague broke out there, culminating in a terrific epidemic when the Jews opened and examined the coffer; this, however, finally dying out when the casket had been put back into he holy of holies, where it stood in seclusion, unmolested. It may, further, be surmised that possibly this plague was new among the Israelites, and, hence, the ravage was more deadly than among the comparatively immunized peoples native to the soil—Amer. Jour. Clin. Med.

The Sugar Content of the Blood.—F. C. McLean, of Portland, Ore., describes the method of finding the sugar-content of the blood and points out the clinical value of its determination. The method of Bertrand is most accurate in his opinion for the determination of glucose in small amounts, and he gives it in detail. The amount of sugar in the blood does not exactly correspond with that in the urine which has been customarily tested by clinicians, and the blood test is of value aside from its physiologic interest, especially in the diagnosis, prognosis and control of treatment in cases of diabetes mellitus. The finding of hyperglycemia alone does not prove the existence of the disease, as its transient occurrence may be due to other causes. If, however, it remains persistent after the withdrawal of carbohydrates from the diet for twenty-four hours or more, the case should be regarded as diabetes, even if the glycosuria disappears. Excessive sugar in the blood is the primary condition, and the tolerance to carbohydrate should be determined by its behavior. A patient may have a constant blood sugar-content of 0.18 per cent., or even more, without sugar in the urine. The diet should be regulated accordingly and not depend on the urinary finding. The blood examination may also help the prognosis in these cases, as recently shown by Frank, in most cases of glycosuria in pregnancy, the blood-suagr remains normal or is even diminsied following the purely renal character of the disease. In cases of transient hypoglycemia and hypoglycosuria blood examinations may be valuable in the diagnosis as well as in cases of cerebroglycosuria which may have to be distinguished from diabetes.—Jour. A. M. A.

Muscular Action in Writing and Piano Playing.—There is a story of some one in Edinburgh who used to watch in a sort of fascination the shadow, on the blind of a window opposite, of a hand ceaselessly writing far on into the night. This was Walter Scott in his valiant struggle to rid himself of the load of debt which was bearing him down in the last few and evil days of his glorious life. Sir Walter wrote fast, but as far as we know there is no record of the number of words written by him in a given time. It is certain, however, that apart altogether from the intellectual strain of production the work of his hand with the pen must have been enormous. A writer in *Le Rappel* has attempted to measure the muscular expenditure represented by the work of the hand in the act of writing. He says that any person practised in the use of the pen can write on the average thirty words a minute—that is, 1,800 an hour. This, with curves and inflections, represents a length of 300 metres an hour, 3,000 metres in a day of ten hours, or 1,095 kilos (or nearly 700 miles) in a year. Moreover, in writing thirty words a minute, the pen makes on an average 480 curves and inflections, or 28,800 an hour, 280,000 in ten hours—that is, 150,020 kilos, or nearly 100,000 miles a year. If this calculation is even approximately correct, the wonder is that writer's cramp should not be almost universal among slaves of the pen. Sir James Paget once made a calculation of the

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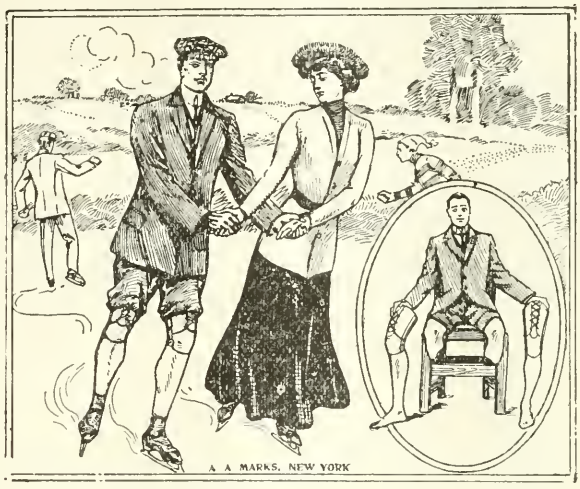

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muscular work done by an accomplished pianist in playing. He told the story in the annual address to the London University Extension Students in 1888. He says: "Mademoiselle Janotha was so good as to play on the piano, at my request, one of the swiftest pieces of music known to her, a *presto* by Mendelssohn. The time it occupied was taken, and the number of notes was counted. She played 5,995 notes in four minutes and three seconds; rather more than twenty-four notes per second. We may, from this, estimate approximately the number of what we may call nervous vibrations transmitted during a given time to and from the brain; from the brain to the muscles, and from the muscles and the organs of hearing and of touch to the brain. Each note required at least two voluntary movements of a finger, the bending down and the raising up; and besides these there were a very large number of lateral movements to and fro of the fingers, as well as many and various movements of the wrists, elbows, shoulders, and feet. It was not possible to count these, but I think I can be sure that they were not less than at the rate of one movement for each note, making altogether not less than three voluntary movements for each note, even if we allow for the chords in which several notes were struck at the same instant. Certainly there were not less than seventy-two distinctive variations in the currents of never force transmitted from the brain to the muscles in each second, and each of these variations was determined by a distinct effort of the will. And observe—for herein may seem a chief wonder—each of these movements was directed by the will to a certain place, with a certain force, and a certain speed, at a certain time; and each touch was maintained for a certain length of time. Thus there were, as we may say, five distinct and designed qualities in each of the seventy-two movements in each second. Moreoever, each of these movements, determined by the will and exactly effected by transmission of nerve-force from the brain along nerve fibers to the muscles—each of these movements was associated with consciousness of the very position of the finger, each hand, each arm, and each foot, before it was moved and while moving it, and with consciousness of the sound of each note and the force of each touch. Thus there were at least four conscious sensations for each of the twenty-four notes in each second; that is, there were at the rate of ninety-six transmissions of force from the ends of nerve fibers, along their course to the brain, in each of the same seconds during which there were seventy-two transmissions going out from the brain along other nerve fibers to the muscles. And then add to all this, that during the time, in each second of which the mind was conscious of at least ninety-six sensations, and directed not less than seventy-two movements, it was also remembering each note to be played in its due time and place, and was exercised with the judgment, in the comparison of the playing of this evening with those of time before, and with some of the sentiments which the music was intended to express. It was played from memory, but Mademoiselle Janotha assures me she could have played it as swiftly at sight, though this would have added another to the sensations associated with each note."—Brit. Med. Jour.

When amputating an infected finger or toe it is very desirable to snugly ligate each tendon, sheath and contained tendon to prevent the entrance of infection into them.—Amer. Jour. Surg.

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THE NERVOUSNESS OF ALCOHOLISM.—In the unstable nervous states following alcoholic debauches—irritability, sleeplessness, etc.—Bromidia (Battle) will be found an agent of exceptional influence in bringing about a disappearance of the symptoms. It exerts a soothing effect upon the cerebro-spinal centers and secures rest for the patient.

THE DEVELOPMENT OF SPEECH.—This is a subject that has been occupying the attention of anthropologists, but it has very practical bearings in psychiatry. We have long been of the opinion that articulate speech was a very late phenomenon. Man had to develop a big brain to survive in that awful period of stress in the increasing cold of pliocene time which culminated in the glacial period. It has generally been assumed that he did not need speech until later when it was evolved by ordinary selection of those who could communicate with each other that way and do better team work, in hunting the mammoth for instance. Woodward of the Kensington Museum concluded that the early skulls showed that articulate speech was not yet possible, but Keith concluded that the speech centers in the brain did exist in the pliocene brain a million or more years ago. There may not have been more than a hundred words or so, but that may have been enough for their primitive needs. Since then the parts have undergone enormous evolution in complexity as the language itself developed. In certain diseases, deterioration attacks the mental faculties in the inverse order of their evolution, and it is therefore not surprising that some speech is left in very late stages of dementia. A study of this fading of speech will surely reveal evidence of the manner of its evolution as also seen in its development, since children epitomise adult stages. Mere babies talk long before the brain has reached nine-tenths of its adult size. Keith is right. Perhaps man's evolution was impossible without cooperation of his fellows in groups, and he must have been able to communicate ideas orally even in the pre-human stage. All gregarious animals do it. The missing links were probably possessed of real spoken language.—Amer. Med.

THE RISKS OF PYLORECTOMY CAN BE REDUCED BY PERFORMING IT in two stages—first the gastro-enterastomy, later the resection.—American Jour. Surg.

AERIAL INFECTION.—The recent change of opinion in regard to the existence of aerial infection, formerly so generally credited, is noticed by C. E. Chapin, of Providence, R. I., who gives a general review of the facts regarding infection through the atmosphere. This includes the subject of dust and droplet infection, the importance of which in his opinion has been overestimated. The question of dosage in causing disease is all-important, but qualitative studies have been somewhat neglected. He gives the substance of Winslow's experiments in support of his own view, maintaining that the precipitation of germs in indoor dust, which has been allowed to accumulate, is no indication of the number in the atmosphere at any one time. He reviews the facts of the carriage of infectious disease in various conditions of typhoid fever, malaria, small-pox, the modern abandonment of the spray method in aseptic surgery and finds but little reliable evidence of aerial conveyance except in a few conditions, like bubonic plague, even of the more resistent bacilli like those of tuberculosis and diphtheria. There is still some difference of

opinion among physicians in regard to chicken-pox, measles, rubella, etc., but the evidence is not, he thinks, conclusive. Anthrax ought to be more easily air-borne than other diseases, and inhalation of dust in the atmosphere may be the cause in some cases. The decrease of the pneumonic or internal type, however, in those exposed has been much greater than that of the external or contact type which would indicate the value of precautions against the inhalations of dust in recent years. He concludes that aerial transmission of disease is rarely an important factor except possibly in tuberculosis, but the last word has not been said in regard to this disorder.—Jour. A. M. A.

In cellulitis of the fingers, avoid if possible, incisions over the tendons which, by exposing them, encourages their destruction.—Amer. Jour. Surg.

The Hard Lot of the First-Born.—Since the days of Esau and Jacob, if not earlier, the younger son has not uncommonly felt some degree of envy for his elder, and as he thought, more fortunate brother. For the eldest there has been the easy lot, the soft place; for the younger the hardship, and the struggle with the world. Professor Karl Pearson, however, comes now to show us that the first-born is truly the unfortunate one of the family, for on him, by virtue of his very precedence, falls an undue share of whatever infirmity or defect may be inherent in the family. He is the heir of the family ills, as well as goods. In a recent lecture, Professor Pearson points out that the limited families of to-day render the condition of the first-born of special importance to the community. There is, it is shown by statistics, a double proportion of still-births among first births—40 per 1,000, as against 20 per 1,000 for second births. Measurements of new-born children showed that first-born were both the lightest and shortest at birth. Riffel, in Germany, found an undue preponderance of tuberculosis among eldest children, and Dr. Heron found the eldest child more often insane than other members of the family. Sir Arthur Mitchell in 1855 showed the same point as regards idiocy, and Dr. Goring recently demonstrated an excess of criminality among first-born. Such a defect as albinism is said also chiefly to affect the eldest. Truly, those of us who used to think we were unfortunate in being younger sons must now congratulate ourselves.—Medical Press and Circular.

Therapeutic value of potato juice.—The use of a raw potato as a remedy for rheumatism is regarded in these days as a relic of superstitious times, and has given place to more scientific methods. Yet, if we are to judge from an article by Heaton C. Howard in the *Lancet* (April 11, 1914), its use has some justification in fact, for this investigator has found the juice of the raw potato to possess distinct anodyne properties. He offers no explanation of its action: the juice contains no alkaloid, in fact potassium salts seem to be the chief ingredient. He prepares the juice—*Extractum Solani Liquidum*—by squeezing out the liquid from the tubers, removing starch and nitrogenous matter, concentrating by heat, and adding glycerin as a preservative. Ten parts of potato yield one part of liquid extract. Several preparations are made from this—an ointment made with lard, a liniment containing soap liniment, and a plaster.

In acute synovitis (with effusion) of the knee joint the liquid extract quickly relieves pain, and causes absorption of the fluid in a few days. Gout and lumbago are rapidly relieved by means of a hot fomentation, the liquid extract is mixed with three or four times its bulk of hot water, applied on lint, and covered with protective and a bandage. For bruises such a fomentation gives relief more quickly than lead and opium lotion. Rheumatism is relieved by one or two applications of the liniment. Whatever may be the rationale of its action, there is no doubt that in the author's hands potato juice has given good results. Two points, he says, must be accentuated; prompt relief from pain, and rapid absorption of the fluid in cases of synovitis.—Prescriber.

Glucose Injections as Stimulant and Tonic—(E. Enriquez: has employed with success intravenous injections of glucose (30 per cent. solution) in conditions of severe infection or intoxication, inanition, defective heart action, etc., in which the serious nature of the condition is indicated by the decreased output of urine. Injections of 250 or 300 Cc. are made into a vein at the elbow, an hour being taken to inject this amount. Fifty patients were so treated, some receiving two or three such injections daily, and several receiving as many as thirty injections in all. This strongly concentrated solution seemed to be quite harmless, there being in no case any indication of injury of the blood or other damage. The proportion of sugar in the blood keeps within normal range, and only a minute portion of the sugar passes into the urine, and this only for a short time after the injection. There is an increase in the total amount of blood; the blood pressure rises and the output of urine increases. The attraction of fluid out of the tissues is a powerful aid in ridding the system of toxins, bacterial or of other origin, and of poisons, especially accumulated anæsthetics.—Prescriber.

Foreign Bodies in Stomach.—A case of marked tolerance of the stomach to foreign bodies is reported by W. O. Wilder, of Pittsfield, Mass. The patient, a carpenter, began to swallow nails in 1908 and later indulged in a diet of knives, cigars, etc., which were sometimes vomited up and sometimes passed by the bowel. He said that he was accustomed to swallowing dog chains of four feet length and women's neck chains of similar length. These were usually redrawn from the stomach. For four or five years he had suffered from pains in the abdomen which had lately become more severe. He was much emaciated; the stools were regular and contained no blood. There was no tumor, but an extremely tender spot in the upper left-hand quarter of the stomach where the Röntgen ray showed an irregular shadow. An incision through the left rectus, above the umbilicus, was made, a gastric adhesion to the abdominal wall freed and a nail found pointed through a small perforation. After walling off with gauze the perforation was enlarged so as to admit the hand and two keys, two twelvepenny nails and 130 other nails and pieces of wire were removed from a pouch-like distension of the cardiac end of the stomach. Recovery was uneventful.—Jour. A. M. A.

Abdominal pains associated with a small mass in the umbilical region, or at the brim of the pelvis, should arouse the suspicion of a possible "fused," "horseshoe," or "pelvic" kidney.—Amer. Jour. Surgery.

The "Antiseptic" (?) Shaving-block.—The dangers to their customers which attend the use of the "alum block" by barbers are emphasized in an article from the pen of Dr. Remlinger in a recent number of the "Revue d'Hygiène." He took possession of one of these blocks which had been in use for two months in a shaving saloon and soaked it for five minutes in 50 Cc. of distilled water, afterwards repeating the immersion with another bath. The block yielded 68,250 colonies of aerobic bacteria to the first, and 59,150 to the second bath, and among the bacteria recognized were the staphylococcus, the bacillus mesentericus, a liquefying fluorescent bacillus, yeasts, and various fungi. On experimenting with a new unused block he succeeded in growing cultures upon it of tetanus, tubercle, staphylococcus, Loëffler's bacillus, anthrax, glanders, etc., which upon subsequent inoculation into guinea-pigs produced a fatal ending. Now, these "blocks" have so far enjoyed a reputation among barbers of being antiseptic by virtue of the small amount of boric acid mixed with the glycerine and alum of which they are composed. The author's researches have completely upset this supposition. He advises that instead of employing a common block for all customers, small pastilles of alum should be used, a fresh one for each customer.—The Hospital.

Some Apparently Inoperable Carcinomata of the cervix will yield remarkably to repeated cauterization with the actual cautery and zinc chloride.—Amer. Jour. Surg.

American Proctologic Society.—The sixteenth annual meeting of the American Proctologic Society will be held at Atlantic City, June 22–23, 1914, at the Hotel Chalfonte. The officers of the society are: President, Jos. M. Mathews, M.D., of Louisville, Ky.; vice-president, Jas. A. MacMillan, M.D., of Detroit, Mich.; secretary-treasurer, Alfred J. Zobel, M.D., of San Francisco, Cal.; executive council, Louis J. Hirschmann, M.D., Detroit, Mich.; William M. Beach, M.D., Pittsburgh, Pa.; J. Rawson Pennington, M.D., Chicago, Ill.; Alfred Zobel, M.D., San Francisco. The following papers will be read:

"A Review of Proctologic Literature for 1913," by Samuel T. Earle, Baltimore, Md.

"Abnormalities of the Colon, as Seen With the Röntgen Ray: Lantern Slide Demonstration," by Walter Irwin LeFevre, Cleveland, Ohio.

"Coccygodynia: A New Method of Treatment by Injections of Alcohol," by Frank C. Yeomans, New York City, N. Y.

"The Technique of the Perineal Operation for Cancer of the Rectum," by Jas. A. MacMillan, Detroit, Mich.

"Myasthenia Gastro-Intestinalis," by V. Lee Fitzgerald, Providence, R. I.

"Further Observations on the Treatment of Pruritis Ani by Autogenous Vaccines," by Dwight H. Murray, Syracuse, N. Y.

"A Report of Cases of Pruritus Ani Treated with Carnotite," by Saml. T. Earle, Baltimore, Md.

"Treatment of Amoebic Dysentery with Emetin Hydrochloride," by Alfred J. Zobel, San Francisco, Cal.

"Amoebic Dysentery and Its Treatment," by William M. Beach, Pittsburgh, Pa.

"Some Consideration of Colonic Surgery," by Louis J. Hirschman, Detroit, Mich.

"Myxorrhea Coli, Membranacea and Colica," by Saml. G. Gant, New York City, N. Y.

"Hemorrhagic Colitis; with Report of Three Cases," by Jerome M. Lynch, New York City, N. Y.

"Retro-Rectal Gumma; Report of Two Cases," by Alois B. Graham, Indianapolis, Ind.

"Anal and Rectal Growths of Benign or Doubtful Character," by T. Chittenden Hill, Boston, Mass.

"Retro-Rectal Infections," by Collier F. Martin, Philadelphia, Pa.

"Radium, Its Use in Proctology," by J. Rawson Pennington, Chicago, Ill.

"Rectal Adenomata," by Granville S. Hanes, Louisville, Ky.

"Hyperplastic Tuberculosis of the Colon," by J. M. Frankenburger, Kansas City, Mo.

"Pseudo-Intestinal Stasis and Real Intestinal Stasis Demonstrated Röntgenologically," by Arthur F. Holding, New York City, N. Y.

"Local Treatment of Anal Fissure," by Jas. A. Duncan, Toledo, Ohio.

"Reflex Symptoms Arising in the Rectum and Anus," by George B. Evans, Dayton, Ohio.

"Some Unusual Results of Sigmoidoscopy," by Ralph W. Jackson, Fall River, Mass.

"Crude and Careless Diagnostic Methods: Results of, in Reported Cases of Recto-Colonic Conditions," by John L. Jelks, Memphis, Tenn.

Study Travels for Physicians.—The American Society for Physicians' Study Travels will make its first tour immediately after the close of the next meeting of the American Medical Association, starting from Atlantic City June 26th. The complete itinerary can be obtained upon application to the Secretary, Dr. Albert Bernheim, 1225 Spruce street, Philadelphia, and it will be found to promise an interesting, pleasant and profitable outing to all participants. The objects of the newly-formed organization are in the main to afford an opportunity to make the best use of one's vacation, time and money, in seeing cities and health resorts, and gaining practical knowledge of their institutions—medical, historical, and municipal—as well as to attend clinics, demonstrations, lectures illustrated with lantern slides, and public addresses.

In addition, however, many sight-seeing trips have been arranged for, and the path of the society lies by rail and water through a section of this country and Canada abounding in picturesque, sylvan, and grand scenes, so that the tourist, whatever his individual taste, will enjoy the advantages of healthful recreation en route. It is believed that American physicians and their wives will appreciate the benefits of these tours, which have become so popular, both in Germany and France, where they are undertaken even more than once annually.

Early bookings, through the secretary, are urged, in order that satisfactory accommodations can be secured for all who desire to participate.

Desiderata of an Anodyne.—In making a choice of an anodyne the careful physician demands those properties of such an agent, viz., that it be therapeutically active in moderate dosage, that it be practically safe, especially with women and children, and that it produce a minimum of evil effects. Since Papine (Battle) easily meets these requirements of the exacting clinician, it has come into wide favor, and, in fact, is enjoying an ever increasing use among discriminating physicians.—(Battle & Co., St. Louis, Mo.)

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TREATMENT OF HEMORRHOIDS UNDER LOCAL ANESTHESIA

By Charles J. Drueck, M.D., of Chicago

WHEN you look through your text-books and see the variety of procedures described it is evident that the ideal hemorrhoidectomy has not been found. This is because hemorrhoids result of some conditions which act differently in each patient, and not only influence the induction of piles but also are a factor in your choice of treatment, which sometimes may be operative or again must be tentative.

In women a hemorrhagic flux sometimes replaces menstruation and in atheromatous subjects this periodic loss of blood lowers the arterial tension and relieves the danger of rupture of the cerebral vessels. In such cases the prudent surgeon declines to remove the individual's safety valve. Hemorrhoids frequently accompany cirrhosis of the liver and here we must never operate because either the wound will not heal, other hemorrhoids will appear higher up or dropsy and a rapid break-down will ensue. The hemorrhoidal veins communicate freely with the portal and general venous systems and all diseases of the liver, heart, kidneys and lungs have an important bearing on the etiology and treatment of piles. Therefore, on your first reception of a hemorrhoidal patient you must ascertain much about his physical condition, his habits and the condition of his piles before you consider his treatment, because some are relieved by very simple procedures, others require major operations and still others are incurable and must not be operated upon at all.

Hemorrhoids that are amenable to treatment occur under very different conditions and in all classes of patients. There are many methods and most of them are good in selected cases and your treatment is half done when you select your case, determine its proper treatment and know what results to expect. The reason you treat so few rectal cases is not that they are infrequent but rather that your patients do not like to have an operation, and particularly to take a general anesthetic and be confined to bed. Patients suffering with piles are prone to use domestic remedies and nostrums until they are physical wrecks from loss of blood and pain, in the meantime refusing an operation. With our present knowledge it is not always necessary or wise to give a patient a general anesthetic and keep him in bed or in a hospital three or four weeks irrespective of the variety or condition of the piles. Practically all uncomplicated cases, and they are numerous, may be operated upon with local anesthetic at your office or at the patient's home. This eliminates the danger to life from heart, lung or kidney complications of a general anesthetic and lessens the pain and danger of secondary hemorrhage due to vomiting.

Hemorrhoids are divided into two great types by the position of their origin, internal or external to the sphincter ani. As the internal type becomes exaggerated and is pulled down by the sphincter it will protrude externally but it is nevertheless an internal hemorrhoid and must be treated as such. This differentiation is important because the treatment of each type is different. In fact, each individual case presents peculiarities of its own, which

demand modifications of the outlined treatment.

Hemorrhoids are ruptured hemorrhoidal vessels. The inferior trunks at the anus or below are covered with skin which stretches but little and the blood is closely confined under tension thus causing severe pain. The middle and superior hemorrhoidal vessels above the anus are covered with soft, fatty, connective tissue, which easily dilates, and the tumor may attain considerable size without causing anything but an uneasiness due to it being a foreign body. When the hemorrhoid has been pulled down by the sphincter and has protruded for some time the mucous membrane becomes dry and thickened and resembles skin. It is, of course, the end capillaries which more frequently give way and thus we have a varicose pile when a venous capillary breaks, an angioma or arterial pile if an arteriole ruptures and when a pile has protruded long and has been bruised and inflamed the areolar structures are changed into connective tissue.

The patient's story of an external pile is usually something like this. He was perfectly well and while at stool either straining or after wiping himself rather harshly he felt a twing or sting at the anus and since then has suffered a sharp, continuous pain. This is a thrombotic hemorrhoid and to the touch feels like an enlarged lymphatic. It is usually single but may be multiple. This condition if found on the skin elsewhere would be called a blood blister and even when you were a child you knew that to let the blood out gave immediate relief. The same treatment holds true here. Rip the tumor open and let out the blood, but whenever you operate about the rectum remember to clean things up a little. I have seen surgeons who would carefully prepare their patient and themselves for a laparotomy, begin work about the anus without any further preparation than simply wipe off the anus with a cotton pleget dipped in bichloride. That will not do. You must wash the whole area well with green soap and warm water just as you would cleanse the skin anywhere else. It is not necessary to shave the hair as it does not cause trouble and if removed the subsequent growth feels so much like a pin cushion as to disturb the patient.

The slight operation for thrombotic hemorrhoids may be painlessly performed by freezing the surface with ethyl chloride. Then steady the parts by holding the tumor between the thumb and forefinger of the left hand and with a sharp pointed bistoury entered at and passing through its base the pile is split in two. The incision shall radiate from the anus because a scar one inch long at the anus in any other than a radiating direction will by consequent contraction make a skin fold which will be dirty and troublesome later. Immediately on opening the skin retracts and the clot usually pops out followed by a little oozing. If the clot does not slip out it should be picked out with forceps, but not squeezed out, as that produces traumatism, breaks up the clot and increases the danger to emboli. Be careful to split the whole tumor, not merely its top. If the patient will strain down during the cutting it fixes the perianal tissues and also assists in removing the clot. When the clot is removed you will notice an oozing from one or both ends of the vessel. Therefore the pile cavity must be packed firmly with gauze soaked in 1:1000 adrenalin solution to stop hemorrhage and prevent the severed edges falling in and glueing together. If this should happen the sack will refill and the pile reform. In twenty-four hours remove the gauze, but do not use force as that causes needless pain and hemorrhage. Rather soak it for several minutes with hydrogen peroxide and it will fall out. If bleeding still continue you will have to repack, but usually the edges have retracted leaving a shallow granulating wound which heals in a few days. The radial folds fall together and close the wound without sutures. Dress the wound each day to see that no feces lodge to irritate and infect. This is a simple operation but gives universally good results and nothing else does. Therefore, it is the only treatment. There are two things you must not do. 1. Do not simply puncture the hematoma. That allows a few drops of blood to escape and relieves the pain for an hour or so until it refills and then the pain recurs. 2. Do not apply a leech because it is dirty and may protract the oozing several days, being both annoying and exhausting. Often the patient does not consult the doctor until the clot has been absorbed, expelled or abscessed and there remains an hypertrophied teat of skin which we know as a cutaneous hemorrhoid. This may also happen unless the wound is well packed open. I never suture the wound because the suture tracks almost always become infected and instead of hastening you retard healing. The suture pinches and annoys the patient.

Cutaneous Hemorrhoid. — A cutaneous hemorrhoid per se causes no symptoms whatever because it is only a skin tag more

or less hypertrophied, but owing to its peculiar situation it is liable to frequent trauma from being sat upon and when inflamed it comes to the attention of the rectal surgeon. It is also aggravated by improper diet, irregular habits and uncleanliness, and requires careful cleansing to prevent maceration which causes an offensive discharge. When inflamed it appears as a hard, edematous, tender mass at the anal margin varying in size from that of a pea to as large as the first joint of your thumb. It is external to the sphincter, and if pushed within the anus it promptly prolapses. It is smooth and shining, covered with skin on the outside and perhaps mucous membrane on the inner side. It is necessary to recognize this form of hemorrhoid as it is a connective tissue tumor and not vascular. Scarification gives no relief and attempts to place it within the rectum makes matters worse. The treatment depends upon what your patient will permit, tentative treatment for relief and removal for cure.

Many individuals go for years with these cutaneous hemorrhoids without suffering by being careful and cleanly in their habits.

When irritated it may be treated expectantly until the inflammation subsides and the pain disappears. Suppuration is exceptional, but the tumor remains larger after each attack than it was before.

Palliative treatment consists of:

1. Rest in bed lying on the face or side (not on the back).
2. Bathing with cold compresses.
3. Apply a soothing ointment.
4. For diet allow meat, green vegetables, fruits and large qualities of water, but avoid starches.
5. Cholagogues must be used judiciously. Each case must be carefully studied for its own peculiarities.

The only curative treatment for these tumors is radical excision. This may be performed under local anesthesia, but to do successful hemorrhoidectomies requires close attention to minute details and careful consideration of your patient's nervous temperament and personality.

The base of the tumor is determined and marked by abrading with a scalpel. A one-half of 1 per cent cocaine solution and one-half of 1 per cent. of 1:1000 adrenalin solution is used for the anesthetic. The mixture must be fresh. The hypodermic needle should have a long, straight tapered sharp point that may be smoothly introduced into the skin as otherwise it sticks in the outer skin, then jumps through. The patient jerks away and you have to begin again. The oblique portion of the needle's point is laid on the skin at the point of first injection. The integument is drawn tense and by moving the fingers only the needle is pushed steadily in until its mouth is buried in the tissues. A few drops of the solution is injected and a welt arises in advance of the needle. The needle is now advanced into this welt, still keeping it in a plane parallel to that of the tissues and another welt formed. In this manner the line that marked the base of the pile is followed around the tumor. The needle is then carried deeper and the process continued because not only must the hemorrhoid be anesthetized but also its base and the tissues underlying so that the patient may not experience any pain. Filling the tumor with cocaine raises the abraided line, marking the base of the pile above the level of the surrounding tissues, but this is the line of incision and the tissue will return to its former level when the fluid has been absorbed or has flowed out. Sometimes a couple of bleeding points need to be picked up and the wound edges approximated with three or four number 1 catgut stitches. A light absorbent dressing covers the wound. Each day this is removed and the parts douched with warm normal salt solution and fresh dressings applied. The parts must be washed after each bowel movement. The wound usually heals in about a week. In placing the stitches be careful that the edges are well coapted and no raw surfaces left, as such places are very painful and delay healing. If one of these spots is accidently left it will cover with granulations which should be clipped off close to the surface. The sutures must be placed as soon after the tumor is removed as possible because when the blood escapes the anesthetizing fluid is also lost and sensation soon returns. It is sometimes surprising to see a tumor dissected away painlessly and then have the patient complain considerably when the stitches are put in.

Internal Hemorrhoids. — The internal hemorrhoids constitute one of the most frequent, painful and troublesome conditions about the anus. They begin in the capillary anastomoses between the portal and caval systems usually just within the anus and extend up a variable distance involving larger vessels and plexuses. These vessels being just under the mucous membrane may distend easily until they are caught in the grasp of the sphincter which then continually tugs at them until they protrude. The suffering caused depends upon the extent of inflammtaion, ulceration or strangulation of the pile and

is also responsible for other rectal, reflexed pain and disturbances. There is also produced a saneous discharge which causes a persistent pruritis and finally through infection abscess and fistula. Clinically, we often find a patient with both external and internal hemorrhoids at the same time. The venous capillary usually gives away but sometimes the arterial capillary ruptures. The two varieties must be distinguished because palliative treatment is useless with the arterial variety.

The arterial hemorrhoid is really a neavus. It arises in the anal canal never more than two inches within the bowel. It cannot be felt by the finger, and as it does not protrude it must be seen through the speculum. It attains the size and appearance of a raspberry and is characterized by excessive hemorrhage which is sometimes spurting in type and during which the patient may be exsanguinated. A number of such deaths have been reported. They cause little or no pain, rarely protrude and may occur alone or combined with the internal venous hemorrhoid. If found alone I use the galvanocautery. The technic is very similar to that which the rhinologist uses when cauterizing the nose. A good sized fenestrated speculum is introduced and the pile engaged in the opening. A few drops of cocaine are injected into the pile and the cautery applied at a dull red heat. It is applied momentarily only and repeatedly so as not to radiate heat and yet coagulate the lymph and plug the vessels. Be careful not to cauterize too deeply nor simply sear over the surface. The whole pile must be destroyed down through the submucosa so as to destroy the chief blood supply. The cautery tips are small and are plunged directly into the pile. The arterial hemorrhoid is usually found singly, but rarely two or three may be found. If so all may be removed at one sitting. After finishing the operation, cover the wound liberally with soda bicarbonate to relieve the pain. I rarely find opiates needed. Each day I introduce the finger well covered with 10 per cent. ichthyol in petrolatum to keep the sphincter relaxed and to protect the granulations. The care of the bowels is the same as will be spoken of in the treatment of the venous variety which we will take up next.

Venous Hemorrhoids.—Venous hemorrhoids are the most common variety of piles and vary so much in size, complications and degree of suffering they cause the patient that no one plan of treatment is applicable for all cases. Where the tumors are isolated and prolapsed they may be removed under local anesthesia at the office. Where they are not prolapsed and where they extend high up in the bowel they are usually complicated with a narrow anus and an hypertrophied sphincter. Under such conditions it is difficult to reach the top of the varicosity, and as the whole pile must be removed it had best be done under ether. Of course if all the pile is not removed your operation affords only temporary relief and is otherwise a failure. If several hemorrhoids are to be removed, the operation had better be done at the patient's home even if under local anesthesia because if performed in your office there is danger of secondary hemorrhage from a stitch pulling loose by the patient's movements on his way home. Let us divide these venous tumors into

1. Those that must be treated tentatively.
2. Those that may be removed under local anesthesia.
3. Those that require a general anesthetic and confinement to bed and absence from work for some time.

Venous hemorrhoids may be much relieved by palliative treatment where surgical treatment cannot be instituted either by the patient's refusal, some jeopardizing systemic condition or in aged or delicate individuals. In all of these conditions unless there is excessive bleeding or strangulation it is better not to operate but to use local tentative measures as there is always danger of embolism, hypostatic pneumonia or phlebitis after operation on such subjects.

If the hemorrhoids are inflamed and prolapsed they must first be reduced. If the patient is seen at his home he should be sent to bed. An upturned chair is placed in a slanting position on the bed and the patient on his knees reclines against the chair. This places him in an extreme oblique lateral position, a posture between the Sims and knee chest.

Next paint the whole hemorrhoidal mass with 2 per cent. cocaine in 1:1000 adrenal in solution and then wait twenty minutes because the circulation in this edematous and strangulated mass is slow and the drugs are not rapidly absorbed. Gravity depletes the tissue and the patient's position with the thighs flexed relaxes the pelvic muscles so that the protrusion will either reduce of its own accord or may be easily replaced. Of course all of it does not belong internal. Probably about one-half does and a lateral sulcus running parallel with the median raphe will usually be found. Internal to this line is mucosa and external to it is skin. This should be remembered because if the whole mass is

placed within the rectum the patient will be just as uncomfortable as he was before. That part external to the sulcus is edematous external tissue and sometimes it may be necessary to incise this to deplete it quickly.

After the hemorrhoids have been properly replaced the whole anal region should be well covered with gauze compress and the patient let down on his bed stretched out prone. The pad and the buttocks are now strapped down with adhesive plaster reenforced with a T bandage. If the hemorrhoids are inflamed but not strangulated they should be given a bath of warm, slightly antiseptic solution followed by a cold douche and then an ointment applied. The patient should lie on his face as long as he can and then may turn on his side with the hips elevated on a pillow or two. Keep the hips up and do not let him lie on his back. This is important because it will arrest infiltration, hasten resolution and relieve pain more effectively than any other remedy.

The next day put the patient on his side with the knees well flexed, dilate the sphincter gradually and massage the hemorrhoidal field. Irrigate the rectum and anal canal with sterile water and swab the piles with 1:1000 adrenalin solution and apply ointment on the outside. If there is much mucus discharge it will be well to inject one-half ounce of aqueous fluid extract of krameria at night.

The bowels must be kept open each day and it is a study with each patient to find something laxative but not exhaustive. Sulphur is gentle in its action, produces a soft mushy stool which easily slips by obstructions and allays inflammation by its presence in the stool. Castor oil also produces a soft stool, does not create gas and leaves the abdomen relaxed. It is a good plan to have the bowel movements at night that the patient may rest after cleansing and dressing the rectum.

Hemorrhoid sufferers should avoid strenuous exercise, bicycling, riding, automobiling and railway journeys as these all maintain a position with the thighs flexed, which opens the anus below the internal sphincter, thus losing the anal support. By careful, close attention these patients can usually be made very comfortable, but of course it is only tentative and not curative.

Removal Under Local Anesthesia.—One of the cardinal reasons for using a local anesthesia is to interfere as little as possible with the patient's pursuing his regular duties. Therefore, too much must not be attempted. Where several hemorrhoids are to be removed it will require several sittings. Only one or two should be removed at one day. A local anesthetic has a distinct advantage in aged, timid or nervous patients who object to the anesthetic, but you must attempt only such cases as the tumor can be brought outside or the anus is patent. Internal hemorrhoids, bleeding and painful, and demanding operation, but not protruding to any extent, cannot be satisfactorily removed under a local anesthetic because the very first step in the treatment of such a case is careful but thorough dilation of the spincters, and that is impossible without a general anesthetic. If the anus is patent or if you can easily reach the upper limit of the base of the pile without much stretching you may operate under cocaine, but if the pile is a large one the patient should rest in bed for a couple of days. The determination of which hemorrhoids shall be operated upon with local and which under general anesthetic is an important matter, and yet in a general way we can say most cases may be operated upon safely in the physician's office or at the patient's home under local anesthesia, causing but from a few hours to two days' detention from business. Where only one or two piles exist the operation may be performed in the office and the patient sent home after a little rest, but in aggravated cases where a large area is involved or where the blood vessels are atheromatous the work should be done at the patient's home or at the hospital to protect against the chance of secondary hemorrhage.

To prepare the patient give him a soapsuds enema of about one-half pint and then let him empty the bowel by straining. This fills the hemorrhoids and causes them to protrude. Place him on the table in the Sims position and if the piles do not protrude or cannot be brought outside of the anus the work must be done through a speculum. If it is necessary to use the speculum you must dilate the sphincter, at least, partially with Kelly's conical or a vibrating dilator. If the hemorrhoids have protruded for some time the sphincter will usually be found relaxed and will not need dilating. If you do dilate use five to ten ten minutes to relax the sphincter gradually. When working through a speculum one of the great points in painless manipulation of the sphincter is to evenly distribute the pressure throughout its circumference. By injecting twenty to thirty minims of a one-half of one per cent. solution of cocaine into the sphincter muscle just on either side of the posterior commissure at the point of entrance of

the lesser sphincter nerves the muscle may be dilated with comparatively little pain. Of course it cannot be divulsed, but why should you do that? Five minutes after injecting the sphincter introduce a bivalve speculum, open it a little and massage the muscle, but be careful not to tear the mucous membrane. Having opened the anus you can now reach in, pick up one of the piles and bring it outside or introduce the fenestrated speculum and engage a pile in the opening and work inside. Whatever method is used the best results are obtained by keeping the tumor at or near its normal position. Dragging it forcibly outside distorts its relations and interferes with placing the scar in its proper angle with the anus.

The particular hemorrhoid having been brought into place may now be anesthetized by infiltrating, as I mentioned earlier. The needle must be fine (thin) as a thick needle, may be thicker than the capsule of the hemorrhoid, and instead of infiltrating you will drive the needle directly into the circulation. Never begin any manipulation, pinching or operating on the hemorrhoid until it is anesthetized. When everything is ready dissect the pile up from below until a small pedicle is formed. This is transfixed with a fine, round needle carrying a double ligature of fine catgut which is tied on either side. I always use a double ligature if I can because it prevents possible secondary hemorrhage from slipping. Having tied the suture cut the tumor off and cut the ligature close. After you remove the hemorrhoid let the wound bleed a little to wash out any cocaine left in the tissues and then apply a compress soaked in 1:1000 adrenalin for a few minutes to stop the oozing. If I cannot dilate the anus enough to ligate the hemorrhoid I use the electropuncture which I described when speaking of the treatment of arterial hemorrhoids and which gives good results. Its use, however, requires several weeks, because only a couple of applications can be made at one time, and about two sittings a week are all that can be endured. If, after a couple of weeks, soreness is complained of, the treatment must be stopped for a week or two to allow healing. In this work an assortment of straight and curved tips are needed.

After either of these operations there results only a slight oozing which can be cared for by a small external pad during the first few days.

The degree of pain following any operation for hemorrhoids depends somewhat on the temperament of the patient, but also, and to a large degree on the technic and skill of the operator. During the first day I use hot compresses and after that a hot sitz bath for twenty minutes each day. This cleanses the peri-anal region and relaxes the muscles. When the patient lies down do not allow him to lie on his back because in that position the middle and superior hemorrhoidal vessels in their upper portion are in a vertical position. At the pelvic brim they bend a sharp angle and the abdominal contents are superimposed. All of these obstruct and as the hemorrhoidal vessels have no valves there is a back pressure and a tendency to swelling, a giving away of the stitches, and more pain as well as a delay in repair. Therefore keep your patient prone or in the Sims position.

No opiates are needed for pain or for tying up the bowels. If he has been properly prepared the bowels will not move until a purgative is given. These patients expect defecation to cause terrible pain and I presume their fear acts as an inhibition. The accumulation of flatus in the bowel is frequently an annoyance. If it occurs urge the patient to avoid it. If left to himself he usually restrains the desire because he is afraid bleeding may occur and he will often spend a wakeful, restless night when he could have relieved himself without any possible harm.

If the sphincter contracts spasmodically and causes pain it shows you did not relax it well before operating. It may usually be relieved by hot compresses. I do not use a hot water bag because of the danger of burning.

Our patients will suffer less pain if we remember:

1. The wound must not reach the muco-cutaneous edge as that is the most sensitive point at the anus.
2. The wound of one hemorrhoid must not be disturbed when removing another.
3. The axis of the wound must conform to the axis of the anal canal. This coaptates the wound edges and the scar cannot narrow the lumen of the bowel or catch feces.
4. One incision or all of the wounds together must not involve the whole circumference.
5. Hemorrhage must be arrested and you must be prepared for secondary hemorrhage if it occurs.
6. Never use bichlorid of mercury during the operation or in the dressings because it will set up a teasing diarrhea.
7. Never plug the rectum with gauze or a tube. It can not do any good and always makes the patient feel uncomfortable.

438 East Forty-sixth street.

COCAINE AS A RESPIRATORY STIMULANT *

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Author of "Narcotic Drug Diseases and Allied Ailments," etc.

THE fact that cocaine is a respiratory stimulant has been known for ages, but there is nothing in medical literature, so far as the author has seen, that would lead one to conclude that it is the most prompt and efficient of all respiratory stimulants; in fact, that it is the one remedy which has the power to restore espiration when other remedies seem powerless to do so. The author's rather extended experience with the remedy leads him to believe that such a conclusion is justifiable. To show, in part, the ground the author has for such a conclusion two cases will be reported in detail:

Case No. 1.—J. J. T., alcoholism, with threatened respiratory failure. Patient admitted June, 1912. Had been in semi-comatose condition for a couple of days, following alcoholic delirium. Bowels had not moved for several days and system was extremely toxic. Pulse 110 and of small volume. Arterial tension very low; respiration six to ten per minute and irregular.

The writer was not at sanitarium at the time of admission and those in charge attempted to stimulate respiration with adrenalin, strychnine and caffeine, but full doses of these drugs made no perceptible impression on the character or rate of respiration. If continuous efforts were made to arouse him he would breathe eight to ten times per minute, but if left to himself the respiration would fall to from five to eight per minute for a short time, and then there would be a period during which he would breathe about ten times per minute. The restoratives above mentioned, together with saline solution, were freely administered for several hours without effecting any material improvement in the condition of the patient. At this time the writer saw the case and at once administered one-half grain cocaine hypodermically. Within ten minutes slight improvement in character of respiration was noted. One-half hour later another one-half grain cocaine was given, and this was followed by almost immediate improvement in respiration, and ten minutes from the time of giving the second one-half grain dose, the patient was breathing twelve times per minute, and more regularly. This improvement was maintained without perceptible variation for one and one-half hours, when breathing again began to be irregular and less frequent. Two hours from the time of giving the second dose of cocaine, respiration was eight to nine per minute and somewhat irregular. At this time three-quarter grain cocaine was given and within five minutes the irregularity disappeared and the rate was restored to twelve per minute. This improvement held without perceptible change for one and three-quarters hours, but in the fifteen minutes following that time, both irregularity and reduced frequency of respiration again occurred. One grain of cocaine was then given with almost immediate improvement. The respiration became regular and from twelve to fourteen per minute. This improvement continued for two and one-half hours, and then began to show both irregularity and decrease in frequency. Three hours from time of giving last dose of cocaine, respiration was eight to nine per minute and irregular. One grain was again given with prompt restoration improvement. This improved condition continued without perceptible change for two hours, but during the next hour both irregularity and decrease in depth and frequency of respiration occurred, and the patient's condition, so far as respiration was concerned, was practically what it had been when the effect of the remedy had waned three hours before. One grain of cocaine was again given with prompt restoration of a more favorable condition, and this improvement was held almost exactly two hours, when respiration again began to be irregular. The patient was watched and the dose withheld until the end of the fourth hour from the time of administering the last dose. At this time the respiration was nine per minute and irregular. One grain of cocaine was then given and ten minutes later respiration was twelve to fourteen per minute. Following this, one grain of cocaine was given every three hours for the next twenty-four hours, during which time free elimination by bowels and kidneys was obtained, and it was then found that one grain given every four hours maintained fairly normal respiration, but if withheld longer than that, respiration became unsatisfactory. As the system was more fully freed from toxic matter, the time between doses was lengthened to five hours, and then to six hours, and later discontinued. Altogether, the drug was given five days in this case, principally in doses of one grain, repeated at intervals of three hours, and while efforts were made to substitute other respiratory stimulants for it, none of those which were tried seemed in any way to take its place or to improve the condition of the patient.

The threatened respiratory failure in this case was evidently due to the toxic condition of the system, for as this toxic condition was overcome, normal respiration resulted, but in the meantime, cocaine served most happily, and was the only remedy which seemed to have direct effect upon the respiratory function.

Case No. 2.—B. S. J., paraldehyde poisoning. Patient admitted June, 1913. Had taken Keely treatment for morphinism one month previous to admission, and to overcome the persistent insomnia which followed that treatment (gradual reduction), after trying a number of hypnotics to no avail, had begun to take paraldehyde. For about two weeks he had been taking two one-half ounce doses of paraldehyde daily. Patient said that from the time of beginning the use of paraldehyde one dose of this size was not sufficient to induce sleep, but by taking a second dose, two or three hours later, he secured a full night's sleep. For several days preceding admission patient had been showing signs of intoxication from it. Instead of inducing sleep, patient was rendered wakeful, nervous and excited. He was allowed his usual dose of paraldehyde (one-half ounce) at bedtime on day of admission, but did not sleep at all during that night. At 9 a. m. the next day one-half ounce was given, but sleep did not follow. Patient being a physician, insisted on having a second dose, which was given at 1 p. m.

This was followed by a slight stage of excitement and the patient then fell asleep, and one hour later, stentorious breathing attracted the attention of the nurse, and upon going to his room patient was found to be in a deep stupor,

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from which he could not be aroused. The house physician was summoned and found patient cyanotic, breathing six to eight per minute and irregularly; pulse 120. Vigorous efforts to arouse patient, including forcible dilation of the anal sphincter, were unavailing. Strychnine, caffeine, and adrenalin were freely administered, but with no apparent benefit. One quart normal salt solution was given by rectum and faradic current applied to base of brain and over heart, and artificial respiration practiced. The writer was called from uptown office and saw patient at 3 p. m., two hours from time of giving last one-half ounce of paraldehyde, and one hour from that time stentorious breathing attracted the nurse's attention. At this time patient was deeply cyanotic, artificial respiration was stopped for a short time, during which three or four voluntary respiratory efforts per minute occurred. Pulse was 150 and of very small volume. One-half grain of cocaine was injected into the pectoral muscle, this point being selected because it was less cyanotic than other parts of the body. Artificial respiration was resumed and the body wrapped in heavy blankets, wrung out of hot water. Faradic current to base of brain continued and normal salt solution by rectum and by hypodermoclysis was given in large quantities. Fifteen minutes from time of giving the first one-half grain cocaine, another was given, and thirty minutes later one grain more was given. Considerably more vigor, in the few voluntary efforts at respiration, was noted in five minutes after the second one-half grain dose of cocaine was given, and ten minutes after the one grain dose was given, six to eight voluntary efforts at respiration occurred per minute, and we were able to suspend artificial respiration for from five to ten minutes at a time without marked increase of cyanosis. Thirty minutes from the time of giving the first one grain dose of cocaine, another grain was given, and within ten minutes from that time respiration was so improved that we were able to discontinue artificial respiration, his breathing then being from eight to ten per minute and fairly regular. This condition continued without noticeable change for forty minutes, when there was a slight decrease in respiratory movements. At this time one grain more cocaine was given, and in a few minutes marked improvement in respiration occurred, the rate increasing to ten or twelve per minute, and it was not necessary to administer further respiration. Cyanosis disappeared and after six hours of fairly normal sleep patient was aroused without difficulty, voided a large quantity of highly odorous urine, after which he was allowed to resume his sleep, which lasted several hours more.

In this case there was no perceptible response to any remedy except the cocaine, but the effect of that was most happy. The four physicians present were fully agreed that the free and timely administration of cocaine brought the case to a favorable issue, when death would have otherwise been inevitable.

While cocaine is not a remedy one would select by preference, because of the untoward effects which have so frequently been reported from it, still the author would call attention to the fact that in most of the cases where death has been recorded as occurring from the medicinal use of cocaine, convulsions or a state of intense excitement was induced by it, the patient at the time of administration being in apparently normal condition. However, had these patients been profoundly comatose, or suffering from opium or other forms of drug narcosis, it is more than likely that such condition, so far removed from a state of excitement or spasm, would have more than offset and neutralized the tendency of the drug to produce such unfavorable results.

The author has employed this remedy as a respiratory stimulant in cases of this type for a number of years with most happy results, and it is his belief that in cases where a respiratory stimulant is really necessary, it can be given with safety, and certainly with marked benefit.

Discussion.

Dr. Louis Leroy, Memphis.—The subject of cocaine as a therapeutic agent is one that offers a number of contradictions which are, so far as I know, not explainable. There is a more or less indefinite law that frequently minute quantities of a drug have an opposite effect to what large quantities have in regular doses. In a general way, perhaps, something of this truth was recognized and used by the old advocates of homeopathy. It is said that some element of truth attaches to that principle. I have seen, as you all have seen, numbers of cases of cocaine collapse when the amount of the drug used has been infinitesimal. I have seen collapse with two or three drops of a one-fourth per cent. solution used in the urethra. I have seen marked constitutional symptoms lasting for hours where a drop of dilute solution in the eye was used for the purpose of removing a small fragment. I have seen the same thing from the application of cocaine to the tonsil or nose, containing an almost immeasurable amount. These are things which tend to frighten us in the use of cocaine. Time and again I have seen collapse in dentistry where one drop perhaps of one-tenth of one per cent. solution has been injected into the gum or beneath the peridental membrane. These minute doses can scarcely be taken as a definite therapeutic action of the drug without being able to discriminate accurately between the two. There is a distinction. There is a nervous reflex or nervous collapse which these minute doses sometimes produce, separate and apart, and seem to follow out lines different from the regular therapeutic administration of the drug in what we may call therapeutic doses of one-quarter or one-half or even a grain, and it does not follow that because a person may be sensitive to the minute doses on a mucous membrane or the eye, that the therapeutic doses given hypodermically will cause collapse.

Another drug which is not quite so marked in its effect, and which has the same discrepancy as the effects of this drug, is hyoscin hydrobromate, which is a powerful hypnotic given in one one-hundredth of a grain doses. I have seen the four-hundredth of a grain render people almost insane, and I have seen people in whom that dose was quadrupled and repeated come right down to the ordinary action of therapeutic resistance of the drug without any change. There are some paradoxes in the effects of cocaine. It is a dangerous drug to be used. We do not use it indis-

criminately, but I have seen, as the doctor has reported, marked stimulation result, which has been very marked in shock, in pneumonia; and above all, I believe it is of value in opium poisoning. The drug is valuable in the extreme in those cases in which we have got to resort to something. There is a rapid response usually to cocaine, and it can be given in doses of over a grain. One-quarter of a grain is the dose I have usually prescribed in my work. Dr. Petty has given it in still larger doses.

A REVIEW OF IODINE THERAPY*

WHILE the external application of iodine is a comparatively simple matter, its internal administration presents at the outset several difficulties. The most important of these is its irritant action—a difficulty that cannot be surmounted by the simple methods available when the element is employed externally. According to Dixon,[1] iodine, when administered internally, is absorbed as iodide and produces the usual effects of iodides, being excreted in the ordinary way by the urine, milk, perspiration, and bronchial mucus: a small quantity is excreted as hydriodic acid into the stomach. Its action differs from that of the iodides on account of its irritation of the stomach, large doses giving rise to gastro-enteritis and collapse: it is also believed to have a greater effect on the thyroid gland than the iodides, and symptoms of thyroid poisoning are said to be more common after its use.

While the use of free iodine is thus greatly limited, the action of iodides is much less irritant, and allows of these salts being administered in its place. Iodides are readily absorbed, and in large doses frequently produce the symptoms known as "iodism." This condition appears to be due to the liberation of free iodine in the system, and the fact that iodism may frequently be avoided by giving larger doses of the iodide is probably due to the circumstance that free iodine is readily soluble in solution of an iodide, and is thus readily eliminated.

The real action of iodides on the system is the subject of much controversy. While there can be no doubt that the more pronounced symptoms of iodism—coryza, conjunctivitis, and skin eruptions—are due to free iodine, it is also equally certain that when iodides are administered the iodine ion in some way combines organically with the proteins of the body. It is also known that iodides directly stimulate the activity of the thyroid gland, and many of their physiological effects may be due to such stimulation. It has been suggested that their action in myxedema and in atheroma may be due to their effect on the thyroid secretion. Whatever be their actual mode of action in the system, their effects have been well studied and are well known, and with the advent of numerous organic iodine compounds, which minimize or altogether avert the danger of iodism, the internal applications of iodine are now greatly multiplied.

Excretion.—The value of excretion as a guide to the therapeutic activity of iodine has been emphasized by Borrutau of Berlin.[2] His experiments lead to the inference that iodine is physiologically more active when its excretion from the body is delayed for the first few hours after ingestion. He establishes the fact that compounds of the halogens which leave the body slowly are more efficient than those which disintegrate rapidly, and that they admit of a lower posology. These various phenomena are very marked in different chemical compounds of the same element. It is contended that comparatively insoluble forms of drugs—and consequently those of slower disintegration—are more likely to exert a longer continued activity, and, on the other hand, to avoid the massed effect of rapid disintegration: *à fortiori* insolubility has an inhibitory action which causes the physiological effect to be more uniform and gradual, at the same time lessening cumulative tendency.

It has long been recognized that the heavier salts of the halogens, such as the iodide and bromide of strontium, yield up their iodine to the system at a slower rate than the correlated salts of ammonium, sodium, and calcium. The former—owing to their slower diffusibility—have given better results. This slower diffusibility, it is thought, is due to the slightly slower tendency to disintegration possessed by the "heavier" salts of the halogens.

Blood Pressure.—The old view that potassium iodide lowers the blood pressure must be discredited, as the observations made by Burnet[3] tend to prove that when given by the mouth it has no effect whatever upon either the pulse rate or the blood pressure within the arteries. His use of iodipin hypodermically proved that in no case was the blood pressure altered, or the heart's rate or rhythm affected. He found that the heart's action was never increased nor depressed, and that the pressure within the radial artery, when markedly high to begin with, was never lowered even after a somewhat prolonged use of iodipin injections or of potassium iodide given by the mouth.

Circulatory Diseases.—The therapeutic uses of iodine and its preparations inter-

* Prescriber, May, 1914.

nally are very numerous, and indeed it is very difficult to set a limit to their sphere of usefulness in practice. In certain conditions of the circulatory system iodides are specially indicated, and more especially perhaps in arteriosclerosis. Thus Spitzly[4] recommends a combination of potassium iodide and potassium bromide, of each 4 grains thrice daily as a specific for this condition. Robinson[5] does not believe in the administration of digitalis or of iodides in cases of arteriosclerosis, and especially in combination. He considers that they do more harm than good, particularly in patients past middle life. He lays more stress on other measures, such as diet, rest, fresh air, suitable baths, and clothing, and the avoidance of constipation.

Then again, iodides are useful in cases of angina pectoris. Burnet[3] suggests that to be of any real service 30 to 60 grains per day should be given, and that the administration should be kept up for months. He maintains that iodides relieve angina by a definite antispasmodic action upon the smaller vessels of the heart, which in cases of angina are spasmodically contracted, thereby producing anemia of the organ. Their value in aneurysm is also well known.

In neuritis of an arteriosclerotic nature, Howell[6] recommends a mixture containing nux vomica and potassium iodide. He has found ionic medication very useful in cases of rheumatic or gouty origin. The skin is well moistened by the application of hot air or hot compresses, and iodine ions may then be introduced at the anode, a fairly powerful current being used.

Respiratory Diseases.—In cases of respiratory disease, the iodides find a wide and varied field of usefulness. In asthma, for instance, they are of undoubted value. In this disease probably doses of 5 to 15 grains will be found most reliable. Certain advertised cures for asthma contain potassium iodide as their main ingredient, and certainly in one case this fact has been confirmed by Stephenson.[7] Moeller,[8] referring to the value of potassium iodide in asthma, complains of the unpleasant secondary effects of the drug. These he avoided by the use of a protein compound of iodine called "iodoglidine," which he gave in doses of six to eight tablets daily, each tablet being equal to ¾ grain of iodine. This preparation, he found, was tolerated without any irritation; while, unlike other iodine preparations, it does not accumulate in large quantities in the system, and thus causes no symptoms of iodism.

A mixture containing potassium iodide 4 grains, tincture of belladonna 5 minims, in infusion of gentian, has been found useful as an internal remedy in cases of hay fever. Iodides are also of considerable value in chronic bronchitis and emphysema, and also in pulmonary fibrosis. The use of iodine and the iodides in pulmonary tuberculosis also finds certain advocates. Thus Boudreau[9] gives iodine systematically in this disease, pushing it to the limit of tolerance. He commences with small doses of the tincture, carefully testing the patient's tolerance of the drug, and insists that pure iodine is not so liable to cause iodism as its salts. He gave from 20 to 100 drops per day, and goes up to even 400 drops. Signs of iodism he found to be extremely rare, and in all cases very slight. He recommends its use very strongly, not only in pulmonary but also in renal tuberculosis. The treatment of pulmonary tuberculosis by nascent iodine has been brought forward by Pfannenstill.[10] He obtains nascent iodine in the tissues by giving sodium iodide by the mouth, and ozone by inhalation. The former is carried by the blood and meets the latter in the lungs. The dose he gives is 0.5 to 4.0 Gm. per day, not more than 2.0 Gm. being given at one time. Bain[11] successfully treated six patients by intravenous injections of iodoform. He employed Dewar's formula, in which the iodoform is dissolved in ether containing 40 per cent. of liquid paraffin, so that every ten minims of the solution contains half a grain of iodoform. This amount was given every second day. Crofton[12] also finds this solution of value. Coleman,[13] however, adversely criticises the use of iodoform injections in cases of pulmonary tuberculosis, mainly on four grounds, viz., (1) iodofrom is a weak germicide, not fatal to bacteria; (2) it is not monotropic for the tubercle bacillus; (3) it may produce toxic symptoms; (4) the injection of iodoform is liable to be followed by severe attacks of coughing, and thereby submits the patient to the risk of hæmoptysis or of pneumothorax.

Reeve,[14] in a very excellent article on the nascent iodine treatment of tuberculosis of the lungs, states that this form of treatment produces a marked inflammatory reaction around all infective foci within the body. The effects are rapid and are associated with a minimum of risk. The patient sleeps better and finds great relief owing to lessening of the cough and greater ease in expectoration. The appetite, too, is increased. The author believes that this method of treatment ought to prove ideal as a preliminary to those methods

which aim at increasing the natural immunity.

Torri[15] recommends inhalations of the dry fumes of tincture of iodine in affections of the respiratory tract. These penetrate deeply into the pulmonary cells, leaving behind alcoholic vapors which are immediately fixed to the mucous membranes of the respiratory organs. Recently prepared tincture of iodine should be placed in a wide-mouthed bottle and inhaled. The inspirations, in number from four to not more than eight at each sitting, must be more or less deep and repeated five or seven times a day.

Infectious Diseases.—Iodine has been used in certain infectious diseases, with apparently good results. Thus Ponticaccia[16] employed the tincture in a number of cases of enteric fever in children; and in twenty-seven cases, all of which gave a positive Widal reaction, the results were excellent. Under the influence of this remedy, especially when given from the start, the disease seemed to run a milder and more regular course, while complications were entirely eliminated. He gives eight drops daily to children of two to three years and twelve to sixteen drops to older children. It was readily taken in sweetened water. Ponticaccia suggests that in larger doses it might be of value in the typhoid fever of adults. Then, again, during an epidemic of typhoid fever in the Japanese army, Tsuzuki and Ishida[17] investigated the time required for the bacillus to disappear from the excretions of convalescents. In ordinary circumstances this required an average of fifty-nine days. When potassium iodide was given, however, they disappeared in forty-two days. Patients treated thus, moreover, were free from obstinate constipation, which is a common after-effect of typhoid fever.

Ouftugeaninoff[18] employed iodine in 106 cases of typhus fever with excellent results. Cases treated with iodine showed a mortality of 6.6 per cent., while the death rate of cases treated otherwise was 14.7 per cent. Iodine, he found, hastened the disappearance of the rash, and also reduced the frequency and severity of the delirium. The remedy was given in milk or in solution in some other fluid preparations. He ascribes its beneficial effects in this disease partly to physical and chemical changes in the blood, and partly also to the production of leucocytosis.

Recently one of the physicians at the Smyrna Hospital[19] employed tincture of iodine in cases of cholera. The daily dose was forty to sixty drops mixed with water. Cure followed in thirty-four cases. Dewar[20] has also reported a case of whooping-cough treated by means of iodoform injections. The patient was a boy of eighteen years. The injection contained 1 grain of iodoform in 10 minims of ether. On the third day the temperature became normal, the whoop disapperared at the fourth day, while at the fifth day the patient slept all night without coughing. The injections were given intravenously.

Syphilis.—The value of iodides in the treatment of tertiary syphilis is too well known to call for remark here. When iodides are not well borne by the mouth, Burnet[3] advises the use of iodipin injections hypodermically. As he points out, we find iodides most valuable in cases where the mucous membranes, bones, and nervous system are involved. Schmelz[21] has pointed out the value of iodine and arsenic in treatment of syphilitic affections of the central nervous system. In cases of tabes giving a positive Wassermann reaction he administered mercury for from six to twelve weeks, after which he gave a combined treatment of iodine and arsenic in the form of iodoglidine and arsan, protein compounds of iodine and arsenic respectively. The iodine compound was given morning and evening, and the arsenic compound at midday, after meals. He found these compounds particularly well tolerated—much better than iodides and arsenic—while the improvement in the condition of the patients was very marked.

Chronic Rheumatism.—In chronic rheumatic affections so-called, iodides are undoubtedly often very beneficial. Burnet,[3] in speaking of their use in such cases, states that they do good "by virtue of their effect upon the uric acid excretion. If we give iodides to the patient who is suffering from chronic rheumatism, or from such conditions as sciatica, lumbago, or neuralgia, produced by exposure to cold or wet, and whose urine is acid, then we find that very soon after we have begun our treatment the urine becomes less acid, and may even tend to become alkaline in some cases."

Actinomycosis.—Various writers[22] have reported more or less beneficial results from the use of potassium iodide in cases of actinomycosis. Large doses must be given, however. In one case it was only when 240 grains were administered daily that improvement began to make itself evident.

Meningitis.—In certain cases of meningitis iodine has found an apparent field of usefulness. Schneider[23] recommends a so-

lution of iodine as a prophylactic against cerebrospinal meningitis. His formula is:

Iodi	℥iss
Potassii Iodidi	grn. xlv
Guaiacol	grn. xv
Thymolis	grn. x
Alcoholis (60%)	℥iii

M. Sig.—"A little to be added to hot water, and the steam inhaled."

He also advises simultaneous painting of the nasopharynx with glycerin of iodine (1 in 30) and gargling with 10 per cent. hydrogen peroxide solution. Mowat[24] cites two cases of basic meningitis treated with iodoform ointment (1 in 30 of vaseline) inunctions into the nape of the neck, combined with the internal administration of bromide and iodide of potassium. Rapid amelioration and cure followed in both cases.

Certain Chronic Affections.—In addition to its use in chronic bronchitis and rheumatism, already referred to, iodine preparations are valuable in certain other chronic inflammatory conditions, such as chronic interstitial nephritis, hepatic cirrhosis, pulmonary fibrosis, as well as chronic bone and joint inflammations. In chronic metallic poisoning, for example, by lead or mercury, iodides may confidently be relied on to do good. In these cases iodides cause the poison to be slowly eliminated in the form of insoluble salts of the metal.

Iodo-Formic Acid.—Stern[25] has suggested the use of a combination of iodine and formic acid in the treatment of chronic ulcerative tuberculosis of the lungs. Injections of a solution prepared according to Stern's method (see Prescriber, 1908, p. 75) are made into the interscapular muscles. After a few injections the chest pain is relieved, the cough and expectoration lessen, and a gain in weight is recorded.

Miscellaneous Conditions.—The value of potassium iodide in reducing the milk secretion is well known. Hodgkinson[26] recommends the following prescription:

Potassii Iodidi	grn. xxx. to xl
Phenazoni	grn. x
Spt. Ammon. Aromat.	℥ss
Syrupi	℥ss
Aquæ	ad ℥ii

ft. haustus. Sig.—"To be taken as soon as the breasts become swollen and painful; and repeated twenty-four or forty-eight hours later if necessary.

The use of iodine in cases of carbolic acid poisoning has been suggested by Maberly,[27] as it forms a harmless compound with phenol. About equal quantities of iodine and phenol are complemental. He describes the case of a child who swallowed a considerable quantity of Jeyes' Fluid. Half a teaspoonful of tincture of iodine in a wine-glassful of water brought about a rapid recovery.

Schiassi[28] uses iodine injections with remarkably beneficial effects in cases of varicose veins. A writer in the Lancet[29] recommends a combination of grey powder and iodoform, of each half a grain, thrice daily, in the treatment of tuberculous peritonitis. One case so treated made a rapid recovery. Tincture of iodine is also given internally in the vomiting of pregnancy, in seasickness, and at the commencement of influenza and catarrhal colds. Nottebaum[30] uses tincture of iodine in cases of gastro-intestinal hemorrhage, in ulceration of the gastro-intestinal tract, in the diarrhea of typhoid fever, and similar conditions.

Goitre.—Iodine is frequently used in the treatment of certain forms of goitrous enlargement.[31] It is not, perhaps, so useful in old goitre of the fibroid and colloid varieties. It is best given as potassium iodide internally. The doses should be small to begin with, and cautiously increased. Too large doses may cause the development of exophthalmic goitre. It may be given thrice daily. If after using it for one or two weeks no improvement results, the case is probably one to which the remedy is not suited. The modern theory that exophthalmic goitre is due to an excessive secretion of the thyroid is well worth bearing in mind in this connection. The work of Cameron[32] on the iodine contents of fish thyroids is of special interest. He found that unusually large amounts of iodine are present in some species of fish thyroids. Probably the diet (sea water) accounts for this, and if so it supports the view that the iodine value of the diet plays an important part in determining that of the gland. Evidence at present points to the absence of iodine in the parathyroids.

Short[33] has established the fact that iodoform, when absorbed into the system, either from a wound or from the bowels, is excreted into the blood by the thyroid gland as iodothyrin. He also finds that an excessive quantity will produce symptoms of acute thyroid intoxication, and that in some persons iodoform may induce an attack of exophthalmic goitre.

It has been found that the quantity of iodine in the thyroid gland is increased by the ingestion of vegetable food. It may likewise be increased by the administration of iodine or its preparations, hence its evil effects in certain cases of thyroid disease.

As has already been shown, iodine in the free state is seldom administered internally, although the tincture has been given with some success in small doses in certain

conditions. Iodoform has also been given but it is open to objections of much the same kind. The most favored form of administration is undoubtedly the alkaline iodides, but these also possess certain disadvantages. On account of their rapid elimination large doses are often necessary, the result being gastric irritation and not infrequently symptoms of iodism. To obviate these disadvantages a large number of organic compounds of iodine have been introduced in recent years. In these the iodine is combined with a fatty or with a protein base in a form that is not readily toxic. These compounds, as a rule, contain much less iodine than a corresponding quantity of potassium iodide, but as their excretion is slower, this smaller quantity of iodine is believed to have the same effect, while there is much less chance of its producing iodism.

Of the preparations made with a fatty base, *Iodipin* is perhaps the best known. This is an additive compound of iodine and sesame oil, and occurs as a thick yellow oleaginous liquid, heavier than water. Two forms are met with: 25 per cent. and 10 per cent. Either of these may be used by inunction; for internal use capsules are prepared containing 2.0 Gm. of the stronger preparation, equal to about 10 grains of potassium iodide. Iodipin tablets contain 3 grains of the 25 per cent. preparation, equivalent to ¾ grain iodine or 1 grain potassium iodide. *Iodinol* is a somewhat similar preparation.

Among other preparations of the fatty type may be mentioned *Sajodin*, a calcium salt of iodobehenic acid, which contains 26 per cent. of iodine. It is a tasteless insoluble powder and is given in doses of 5 to 15 grains. *Iodostarin* is di-iodoelaidic acid and is said to contain 47.5 per cent. of iodine. It is a white substance, soluble only in the intestine.

As has already been pointed out the actual iodine content of these organic preparations is of little importance compared with the rate of absorption and excretion. Loeb[34] has shown that after administration of iodides iodine is never found in the nerves or fatty tissues, but after administration of certain organic preparations these tissues readily give evidence of its presence. Affinity for fatty tissues is specially shown by the fatty preparations referred to above; while special affinity for nerve tissues is exhibited by a substance called *Iodival* or monoiod-isovalerianyl-urea, a preparation analogous to the hypnotic bromural. It may naturally be concluded, therefore, that for special absorption by the tissues generally some of the protein compounds would be most useful. There are several of these on the market, the best known being *Iodoglidine*. This is described as a combination of iodine with a wheat protein: it is a brown powder, and is marketed in tablets each representing ¾ grain of iodine. These tablets are insoluble in the stomach, and become dissociated on reaching the intestine, while as already shown the rate of excretion is slow, a condition which admits of a maximum of therapeutic effect.

Numerous other organic preparations of iodine have been introduced. *Tiodine*, for example, is a compound of thiosinamin and ethyl iodide, containing about 50 per cent. of iodine. It is given in pill or hypodermically, and its therapeutic effect is naturally of greatest value in cases where thiosinamin is indicated. *Iodolysin* is a similar preparation. The *Iodo-tannic* preparations are in considerable favor, especially on the Continent; a formula for *Syrupus Iodo-tannicus* is given by Martindale.[35] Sharp[36] recommends a compound of iodine and egg albumin, freshly prepared, as a cheap substitute for organically combined iodine.

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DISINFECTION—WHAT DISINFECTANT IS THE MOST GENERALLY APPLICABLE FOR CLINICAL, SURGICAL, AND SANITARY PURPOSES?*

By Herbert C. Hamilton, M.D., of Detroit, Mich.

Phenol, discovered in 1834, was at first thought to be identical with wood creosote, which at that time was regarded very highly as a disinfectant. This was proved, however, to be incorrect, and while there were points of resemblance there were also several properties not common to both. Beechwood creosote is less poisonous and more germicidal than phenol proper, but it is only very slightly soluble, coagulates albumens more completely, and for various other reasons is almost discredited except for a few special purposes.

The discovery by Lister (1871) that suppuration of wounds could in almost every case be prevented by use of carbolic acid gave a great impetus to its use as a germicide and antiseptic. This work was the basis of the whole modern theory and practice relating to microorganisms, not only as they apply to Lister's special field of surgery but to that of sanitation as well.

Probably no discovery in biology has been more revolutionary and far reaching than his, since he shares with Pasteur the honor of demonstrating the connection between microorganisms and processes of infection. Lister found carbolic acid to be exceedingly efficient, and recommended it highly because of its ready adaptability to the processes of aseptic surgery. While it is fatal in 3- to 5-per-cent. solution to the vegetative forms of microbial life, it is not always effective against spores in any dilution or even in pure form except at high temperatures. However, because of retaining its effectiveness in the presence of salts, acids, alkalies, and even protein, it ranks above mercuric chloride for some purposes, although under ideal conditions the latter is many times as efficient.

That portion of coal-tar oil which remains after phenol is removed was first recognized as having antiseptic value when it was used for pickling timber, a process patented in 1836 in England. It is still an open question what constituent of the heavy coal-tar oils is most valuable as a preservative, but its use for this purpose served to direct attention to the strongly germicidal character of certain of its constituents. A part of the oil, later known as creosote oil because of its similarity to wood creosote, was prepared as a disinfectant as early as 1874. The first preparation of importance was that known as creolin, prepared in 1887. It was analyzed, and its composition made known to the scientific world in 1889. Since that time the number of such preparations has increased enormously, and at the present time there are hundreds of the coal-tar disinfectants composed of creosote oil and soap and containing various proportions of phenols. The germicidal values of these range from that with a coefficient of one, or about equal to pure phenol, to those of exceptional value with coefficients of ten or more, depending on the amount and character of the phenols present.

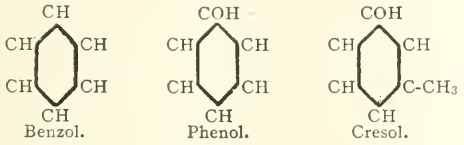
The phenol coefficient is a term used to designate the value of a germicide. Since carbolic acid or phenol is well known as an efficient disinfectant, its value is taken as unity, and the value of any other substance similarly used can be expressed by a number called its coefficient, which indicates how many times more, or in some cases less, the disinfectant can be diluted than phenol and retain an equal germicidal value. Because of the infinite variety of combinations in coal tar, a chemical assay will not give a very accurate indication of the efficiency of an oil. Its real value can be ascertained only by actual comparison with phenol, using *B. typhosus* as the test organism, and finding the dilutions of the sample which are as efficient as certain dilutions of phenol.

These phenols are so called from their resemblance to carbolic acid or phenol proper, and are more or less closely allied to it both in composition and in properties. They differ, however, in several important characteristics. With few exceptions they are liquid and will not crystallize as carbolic acid does; they are very slightly soluble in water, and require a solvent of some character to bring them into a condition in which their activity can be measured and applied; they are much less poisonous and

* Therap. Gazette, May 15, 1914.

corrosive than phenol, and are more strongly germicidal. Chemically the phenols of ordinary coal tar differ from carbolic acid in having one or more organic radicals attached to the benzol ring. The graphic formula for benzol is theoretically considered to be a hexagon, familiarly known as the benzol ring. Each angle of the hexagon is occupied by a CH group, and on this simple form thousands of organic compounds are built up by additions or substitution.

Phenol and cresol or cresylic acid are shown below in their generally accepted formulæ:



It is possible by synthesis to prepare derivatives still more strongly germicidal than those occurring naturally in the coal tar.

The insoluble character of the phenols and of the creosote oil containing them requires the use of an agent to be incorporated with these oils which will allow the formation of a homogeneous solution or emulsion when the product is mixed with water.

Because of the different kinds of oils used and the necessarily different treatments to prepare a substitute miscible with or soluble in water, the coal-tar disinfectants differ among themselves. These differences are unimportant except from the viewpoint of efficiency, and on this basis the disinfectants may be classified into three groups:

Group 1, those with a phenol coefficient of about two which are soluble in soft water, to make a clear solution. Compound Solution of Cresols U. S. P. is an example of this group.

Group 2, the ordinary type of coal-tar disinfectants with coefficients of two to six which emulsify when mixed with warm, soft water.

Group 3, the high coefficient disinfectants which also emulsify when mixed with water, but which are efficient when much more highly diluted.

There are certain advantages in using these coal-tar derivatives which make them far superior to most other disinfectants. These may be summarized as follows:

Convenience.—Compared with dissolving carbolic acid crystals to make a 3- to 5-per cent. solution it is much easier to dissolve any member of these groups. Some can be dissolved in water in any proportion; any one, if properly made, can be dissolved readily to make a stronger solution than is possible to obtain with carbolic acid crystals.

Efficiency.—The members of Group 1 will dissolve readily to make a solution of any desired strength, from that of pure carbolic acid down to one that is merely antiseptic.

The members of Group 2 are more efficient—a 1- or 2-per-cent solution usually far exceeding the efficiency of the strongest solution of phenol.

The members of Group 3 are still more efficient, as their phenol coefficients indicate.

Safety.—The coal-tar disinfectants are practically neither toxic nor corrosive when diluted for use on the basis of their efficiencies.

Character of Solution.—The formula for almost all the coal-tar disinfectants is such that the solution is alkaline and soapy, which aids its penetration. There is very little if any coagulation of protein to hinder penetration and lower the efficiency.

It is evident from the above comparisons that the proper use of the coal-tar disinfectants represents a distinct advance over that of carbolic acid. Even the one factor of safety alone is sufficient reason to exclude the latter from general use.

Comparing the coal-tar disinfectants with those of the metallic salts and gaseous disinfectants the most important point to be considered is:

Adaptability.—Sulphites and sulphurous acid and ferrous salts are strictly limited in their usefulness to such conditions where the abstraction of oxygen or water is detrimental or destructive to the life and development of bacteria, etc. Calcium hypochlorite and potassium permanganate are valuable where bacterial life is endangered by the action of oxygen, these substances being oxidizing agents either directly or indirectly. It is evident, therefore, that such substances are not generally applicable as disinfectants. For purifying water or sewage where oxidation of organic matter is as important as germicidal action the oxidizing agents are especially adapted.

Mercuric chloride, while being highly efficient under exceptional conditions, is so readily destroyed or lowered in efficiency under ordinary conditions that it is not a dependable disinfectant. It is precipitated by soap, protein, and sulphur compounds; it is limited in its penetrating properties because of its coagulating action on albumen; it inhibits the growth and does not kill organisms after short ex-

posures; it is exceedingly poisonous and irritating.

Formaldehyde is limited in its usefulness to its application as a gaseous disinfectant. In this field no preparation can replace it; but a solution of the gas in water applied as a liquid disinfectant is far inferior to phenol. The comparisons made above indicate that even the ordinary coal-tar disinfectants when properly prepared are superior to phenol under all conditions, and surpass all other disinfectants aside from the purposes for which the latter are peculiarly adapted.

Recently coal-tar disinfectants of much higher efficiency have been prepared. The coefficients of some of these in fact are so high that the correctness of such statements is seriously questioned. The origin and chemical character of the oils from which these are prepared are more or less indefinite. Whether the character of the coal or the method of distillation by which the oils are produced is responsible for the high germicidal value is not generally known. That it is not produced in America might indicate that the character of the coal is at least partly responsible for the difference. The methods used in producing gases from coal for use in the steel and iron industries differ in England from those followed in America. It is a well-known fact that the temperature maintained and the presence or absence of air, during the destructive distillation, very markedly influence the character of the resulting products. In one case the benzols appear to oxidize to phenols, in another they appear to polymerize to naphthaline, anthracene, etc. This being true, it may be that still another series of compounds result from a slight difference in the conditions obtaining during this destructive process. The chemical composition has been claimed by Worrall (Rideal's Disinfection and Disinfectants) to be such as to place them among the organic compounds that are entirely different from the phenols of coal tar. Another writer attempts to throw a veil of mystery over them by assigning them to the class of diphenyls.

For the purpose of this article the composition and structure of those high coefficient oils are unimportant. The sanitarian is more concerned with the efficiency of the disinfectant prepared from them. Is there real value in it in proportion to the claimed efficiency? Can confidence be placed in the statement of its value when this so far exceeds that of phenol and similar disinfectants? The question may also suggest itself, How is it possible that a product less toxic and less corrosive than carbolic acid, practically harmless when diluted as it can and should be before using, is so exceptionally active that bacteria are killed in dilutions fifteen to twenty times as great as can be safely recommended?

The average user of a disinfectant rarely knows from results whether it is efficient or not, because he has neither the facilities nor the skill to test it, and because incomplete disinfection or entire absence of it may not be followed by any infection directly traceable to such a failure. Even the chemist, however familiar he may be with disinfectant oils, cannot determine with certainty the efficiency of any product entirely by its chemical properties. Bacteriological rather than chemical control is, therefore, a very essential requirement for disinfectants. Hygienic measures are too vitally important to be open to suspicion regarding the substances used. The methods of applying them are so often open to question that the substances must be in the highest degree efficient.

The ideal disinfectant has been described in great detail by different authors. But the ideal disinfectant for every kind of disinfection is probably unattainable and its desirability questionable.

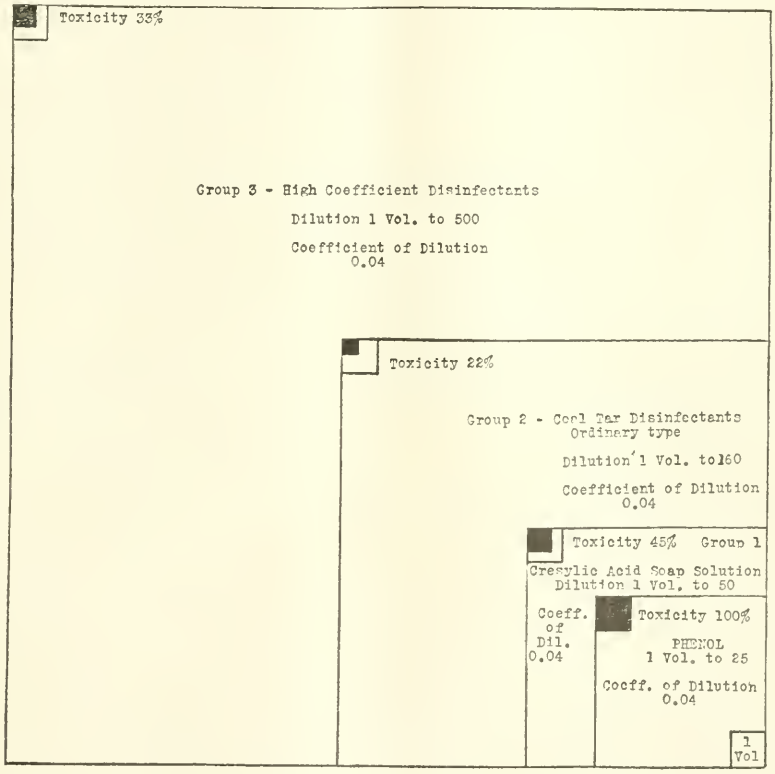
Formaldehyde, mercuric chloride, silver nitrate, phenol, and the coal-tar derivatives each has its sphere of usesfulness, and each is more or less ideal in that sphere. Where a coal-tar derivative is applicable, however, there are certain properties possessed by this class of high coefficient disinfectants which very closely approach the ideal as a general disinfectant.

The average coal-tar disinfectant of Group 2 is used in a solution of 1 per cent., in which dilution it is about as efficient as a 3- to 5-per-cent. solution of phenol. One of the disinfectants of Group 3, with a phenol coefficient of twenty when diluted to a 1-per-cent. solution, is four times as efficient as a 5-per-cent. solution of carbolic acid crystals. The accompanying chart is a graphic representation of the comparative efficiencies and toxicities of representatives of the three groups. The "1 Vol." square is shown in the lower right-hand corner, while the four larger squares show the volumes to which this one volume of phenol and of each of the three groups can be diluted, all of the dilutions having the same germicidal efficiency—a phenol coefficient of 0.04.

The toxicities are shown graphically by the squares in the upper left-hand corners of the four squares representing the dilutions. Phenol, being used as the standard, is entirely black, while the others are blackened in proportion to their toxicities, ex-

pressed in per cent. of that of phenol. The ratio of the black "toxicity" square is a graphic representation of the non-toxic character of these dilutions compared to that of phenol. For example, Group 3 with a toxicity of 33 per cent. has a black square one-third as large as that for phenol; a comparison of the two toxicities with their corresponding dilutions shows that a solution of phenol is sixty times as toxic as a member of Group 3 diluted to an equal efficiency.

The coagulative action and the caustic and corrosive properties of the three groups



can be only roughly measured; these seem, however, to be very closely associated with toxicity. So the practically harmless nature of Groups 2 and 3—particularly the latter—is evident from the chart.

Instruments are not corroded, nor is there any irritation to the healthy skin, when immersed in such a solution. The mucous membrane, however, being more sensitive will tingle and smart from application of this solution because of its alkaline and penetrating character.

Coal-tar disinfectants in general are, like phenol, unaffected by alkalies. While their values are diminished by organic matter more than is phenol, this is apparently a slower action rather than actual lowered efficiency, since there is almost no coagulation of the organic matter. In this case the fact that the disinfectant is in emulsified form explains its slow action, because necessarily the minute globules of oil composing the emulsion require a more prolonged period to penetrate moist organic matter, which tends to retard penetration.

Acids do not destroy but do materially impair the value of emulsified disinfectants in which the vehicle is soap. The same is true of hard or salty water. It is easier, however, to correct these waters or replace them with soft water with which to dilute a disinfectant than to replace soap by any other emulsifier of equal efficiency. Soap has several valuable properties in addition to that of being an efficient emulsifier of coal-tar oils. It is cleansing and tends to dissolve the natural, protective, greasy coating on the skin and other surfaces. It is not devoid of germicidal action in itself.

As a deodorant a coal-tar disinfectant has an action tending to absorb, remove, and replace bad odors. Its real value, however, is to destroy the putrefactive bacteria producing the odors—the only property which makes a deodorant of real value.

An emulsified disinfectant has been proved to exceed a soluble disinfectant even if the same constituents and the same proportion were present in each. This is shown to be due to a concentration of the

minute globules of oily emulsion around the bacteria, the results being equivalent to those from a considerably stronger solution in which no minute globules of oil are present, but all is in uniform solution.

To summarize, a high coefficient disinfectant of the third group is less likely to be destroyed or inhibited in its action and is more generally applicable than the gaseous disinfectants, the oxidizing and reducing agents, or the toxic and protein-coagulating agents.

When diluted to make a solution equivalent to a 3- or 5-per-cent solution of phenol, it is

Non-toxic,
Non-corrosive to metals,
Non-coagulative to tissues,
Not caustic to the skin,
Not affected by alkalies,
Not destroyed by acids,
Not oxidized nor reduced by organic matter,
An efficient germicide,
At minimum cost per unit of efficiency.

It is not merely a substitute for carbolic acid; it is a new material possessing not only all the advantages of this valuable substance, but many others in additon. Why should the physician or the suregon continue to use carbolic acid?

HABITUAL CONSTIPATION AND ITS TREATMENT*

By Max Einhorn, M.D., of New York
Professor of Medicine, Post-Graduate Medical School and Hospital

Under the term habitual constipation may be included all cases of retarded bowel movement in which there is no severe organic lesion, no stricture. This general conception can be subdivided into habitual constipation proper, embracing only those troubles of a functional nature in regard to the movements of the bowel—which includes the majority of cases of bowel constipation—and another group in which the constipation is brought on by abnormal conditions, somewhere else—for instance by severe dyspepsia, disturbances of the stomach caused by too much acid, too little acid, etc. The trouble then is not situated in the bowel, but somewhere else. Again, persons with kidney trouble, liver affections, severe typhoid fever, may suffer from this condition, for these diseases may bring on secondary constipation.

With regard to the symptoms, first, there is no evacuation of the bowel. Instead of having a movement once a day, or perhaps twice a day, we notice that the patient misses having this evacuation for one, two, or three days. The bowels do not move; there is a retardation of the evacuation of the bowel. Many patients show no other subjective symptoms outside of this particular phenomenon, namely, the failure of the bowels to move. There is no pain, nothing of which they complain. A number of these patients, however, do show other signs; some of these are a feeling of fullness in the abdomen, perhaps a lack of appetite, the taste in the mouth is not normal, not exactly right, there are dizziness, headaches. Some patients complain that they cannot concentrate their minds upon their work, and ascribe that to constipation. These are the milder forms. When we come to the more severe forms, we find that the patients are despondent, have no ambition, and look at everything from a gloomy point of view. If this is still further increased, we have some cases resembling melancholia. The despondency is so great that we may almost include these patients in a group of melancholiacs.

Now the question is, what causes these symptoms? We know that we find these conditions in persons who are constipated. What brings on these phenomena, which are sometimes very severe? There was a theory which prevailed for a number of years, and still prevails to a certain extent, that if the bowels do not move properly there are some poisons developed in the intestinal tract which are absorbed and cause these symptoms, and this is called autointoxication. You all know about that. This theory was first brought out in France, and soon prevailed in all countries; the autointoxication theory. Now to a group of scientific men that is all right as a theory, but this theory, which has not yet been proved, has been overexaggerated, and many physicians being overanxious in their work, and trying to have their patients follow directions, say to them, for instance: "Now, you are constipated, and there are poisons developing in your system, and you cannot get along that way; you must change your way of living, and must see that your bowels move every day, otherwise the poisons will get the upper hand of you." This leads to great anxiety and fear on the part of the patient. I have treated a number of such patients, physicians and others, who came to me worrying over themselves and looking as if they were almost on the brink of despair, owing to the great anxiety and fear of poisoning which exists in their systems and which does not exist in other persons. I consider

* N. Y. Med. Jour., May 30, 1914.

this a very important point. The over-application of this theory has done more harm to patients than anything I know of. If it had been proved, we might still have to act accordingly. Even then we should not frighten the patients. But that is not the case; this theory has not been proved to be a fact. Quite the contrary, I think.

We can rather prove that these symptoms are not in reality caused by any form of intoxication at all. There is a physician living in Warsaw, named Dunin, who was one of the first to emphasize the fact that these symptoms, these nervous phenomena which I have described, are not due to constipation as such, but, quite the reverse, bring on the constipation. It is the reverse condition. He showed that if you have a patient who is constipated and worried, and overanxious about having movements every day, and if you give him a good bromide or other nerve sedative, and tell him not to think about his condition, but to leave it alone—that the bowels move by themselves, perhaps not in every case, but in quite a number of them. He concludes, therefore, that all cases of constipation are due to a nervous state of the organism.

I do not think that in reality we can extend that group to include all such cases of constipation, but there is no doubt that a great many of them are originally due to some form of nervous disturbance.

Before we go on to the treatment and management of these cases, it will be well to look into the etiology of constipation. Dunin is a clinician, who has done a great deal to elucidate this matter. As is well known, the custom of having a movement once a day—or twice a day, which is the physiological form—is brought on by the training of the system early in life. Mothers do that with their babies, trying to train them, and that habit is kept up in later life. Now, if something happens to upset that habit, and if it happens not once but a number of times, then we see a way in which constipation can develop. This does occur frequently, owing to our manner of life, to our civilization. Young girls at school, sitting at their desks, may have some inclination to go to the toilet, but they cannot disturb their neighbors, or the teacher may be lecturing, so they sit still and suppress the inclination for an hour or two, and the desire disappears. That may happen one day, then a second, and a third, and so that habit is upset and the bowel movements become irregular. This also happens to persons in business, who may have to get up early and rush to catch a train, and have no time to attend to the matter. They neglect it several times, and attend to it later, and again an abnormal condition is created. This type of constipation is more prevalent in cities than in villages. Among the plain people there are very few who complain of constipation, but we find it among the more highly civilized—those who have to rush and do a great deal in a given time.

Another way in which constipation may arise in otherwise healthy people is through medication. Sometimes a patient will have an acute indigestion, say: he vomits, and the bowel moves too much, for the digestive tract tries to get rid of the obnoxious material. The patient, instead of letting things take their own way, will take an opiate to relieve his discomfort, and then he becomes constipated for a day or two. If he would only wait and let things take their natural course, probably in two days the bowel would move of itself and by the third day would be normal again. But he is in a hurry, and he takes castor oil, and his bowels move two or three or four times, and then he will take an opiate again, and then another cathartic remedy, and so again the regular habit is upset and the bowel does not want to move by itself; peristalsis is retarded, and the patient resorts to more stimulation—and so, in many instances, constipation is developed.

Another way in which an habitual constipation may be developed is through dieting. A patient is put on a rigid diet. He has had regular movements all the time, but he is told not to eat fruit, and to omit potatoes, or perhaps all solid food, and to live on milk, eggs, and soups or milk alone. That changes his habit. Milk produces very little residue, the bowel, which has been accustomed to having a certain amount of fecal matter, has much less, and the peristalsis is weakened, so that it is not strong enough to bring on a movement. The patient thus becomes constipated; and if the diet is extended over a long time, the constipation becomes habitual.

Again, constipation can develop from a lack of fluids. Patients are sometimes told not to take any water. They may have been drinking three or four or five glasses of water a day, and then they are told not to take any water with meals; they are also told to walk a great deal. That is very good, too, but in doing this they take more exercise, and lose more fluid, and then they lose weight. The system needs to have enough fluid in the blood and if there is not enough given and everything taken away, the system will try to get as much fluid as it can and retain it, consequently

the fecal matter is exsiccated too much, and there is too little bulk left. There, again, the peristalsis is disturbed. A few glasses of water taken during the day would harm no one, but the change of living leads to constipation. So you see there is a great variety of ways in which constipation may develop, and all of these points have a bearing on the treatment.

Now there are still other theories in regard to the etiology of constipation. One is that the muscles of the bowel, the muscularis coli, is thinner than normal, *i. e.*, it is congenitally abnormal. That was the theory of Nothnagel, but while in very rare instances there is an anatomical abnormality—there have been cases found in which the muscularis was a little thinner than normal—yet it is difficult to demonstrate that that existed during life, for prior to death there is much change in the digestive tract; and, again, it cannot be a common cause of constipation, for it is found very rarely.

Another theory is that constipation may be due to an abnormal position of the large bowel—either to a kink or a ptosis, or a too long colon. That was first suggested thirty or forty years ago, before the X-ray was known. But a great physician, by the name of Leichtenstern, found that this theory did not hold good, for in autopsies in which the greatest anomalies existed with regard to the position of the colon—in a great majority of the cases—no constipation had existed during life. It may have been that the colon lying very low turned around itself in an angle, but as long as there was no real mechanical obstruction there was no constipation. Leichtenstern therefore maintained that these anomalies do not explain the constipation.

Prof. Adolf Schmidt brought out a new point, namely, that habitual constipation may be due to a better process of digestion and assimilation, so that there is very little fecal matter remaining. He asserts that people with constipation utilize more than the normal amount of substance in cellulose material; there is less left undigested, and consequently there is less fecal matter to cause efficient peristalsis for a bowel movement. That is his theory, and he wants to prove it by the fact that in cases of hyperchlorhydria (too much acid) we very frequently find constipation.

I do not quite agree with him with regard to the general acceptance of this theory. While it is true that in habitual constipation the bulk of fecal matter is diminished and the absorption is very good—perhaps too good—that is not the cause of the constipation, but rather the consequence. That means that if the fecal matter stays longer than is normal in the large intestine (in the small intestine the sojourn of the chyme is about the same, but the trouble is generally in the colon), more of the material is absorbed, everything is worked up better and to greater perfection, and the bowel takes up more nutritive substances. If the material remains in the bowel two days, the work is better done than in one day; and the reason why I do not accept Dr. Schmidt's theory as a fact, is the following: I think I was the first to indicate, years ago, that we have a form of constipation due to too much acid in the stomach, and the way to show that, is that if you give such patients alkalies without anything else, their bowels become normal, indicating that the acidity was the casue of the constipation. But this does not embrace the entire group of hyperchlorhydria, though it is one part of them, and we can make it out only by experiments.

While I found that, I also found that cases of achylia gastrica—and I described them at that time—were also accompanied by constipation, and here, too, dependent on the abnormality of the stomach, the fact that no acid was there; and, here also, by correcting the abnormality and giving the patients hydrochloric acid or a diet suitable for the condition, we improve the constipation.

This theory of Schmidt's cannot hold good in the second group just mentioned. There the digestion is very poor; there is a lack, and in some cases no gastric juice at all, and we have to give such patients digestive help, and still we have the constipation, and if we improve that anomaly we have again the bowel movement. So Schmidt's theory is not right, according to my experience, as this class of achylia amply demonstrates.

Now, a few words about autointoxication. I have said that this theory does not hold good, and the way we can prove that autointoxication is not the cause of the symptoms is, that if we cause artificial constipation by giving the patients opiates, these phenomena—dizziness, headaches—do not develop. Such patients can lie quietly without feeling these symptoms. In former years all cases of appendicitis were treated with opiates, and a patient may lie quietly for three, four, or five days without a bowel movement, and nothing happens. There are no symptoms of poisoning. That is another proof that it is not the constipation that causes them.

Again, it has been proved that absorption takes place principally if the fecal

matter is fluid. If we have fecal matter that is formed, there is not much to be absorbed. Absorption of obnoxious material cannot occur unless the fecal matter is fluid, and there is an ulcerated area in the bowel. Then we may have a disturbance due to the absorption of some poisonous matter, and that happens principally in the group which has been described as fever due to constipation. There are not many such cases, but they occur more frequently in children. If the bowel is not exactly normal and there is constipation with it, and there is much irritation and a small place of eroded mucosa, then some of the fecal matter can become liquefied and absorption take place, and that gives rise to symptoms accompanied by fever.

Treatment.—How shall we manage these cases of habitual constipation? The first point is to reassure the patient and tell him that constipation is not such a great misfortune. That means that he must be assured that if his bowels do not move for a day or two nothing will happen to him. This is a point of great importance: We should try to interfere as little as possible, and to bring back the lost habit of having a bowel movement every day. That can be done by training the system. It will take a long time, perhaps, but ultimately you will succeed—not in every case, but in a great many of them.

The great French physician, Trousseau, was aware of this fact, and he introduced a form of training which was that the patient should go to the toilet every day at the same hour, and try to have a movement. If he fails one day, he goes the next, the third, and the fourth day, and keeps that up. Here, again, a little more detail is necessary, for I have found that some things are done wrong. The rule is that the patient should remain seated for five to eight minutes; he should not exert himself too much, and if he overdoes it, it is worse than time wasted. Years ago I had a patient, a lawyer, who suffered from constipation, and the accompanying symptoms of giddiness, lack of mental concentration, etc. His thoughts were always directed to his bowel movements, and he was an unfortunate man if his bowels did not move. That man told me that most of his law studies were accomplished in the water closet, and when I asked him how long he stayed there, he replied that he would sit there for hours and hours, trying to have a movement. He would take his law books with him, and there he passed the greater part of his time. Another patient told me that in order to have a movement he had to have a cigar, a cup of tea, and a newspaper in the water closet, and there he would sit and smoke and drink tea and read, and that had to be done for half an hour or an hour before he was successful. That is not the way to carry out the treatment. Patients should not sit too long, and should not read newspapers and smoke cigars, but should wait a little time and then leave. If too great an effort is made, the exertion brings on hemorrhoids. Any natural process must be done in an easy way, or some disturbance is sure to follow. So the question of habit is of the greatest importance.

Now, with regard to diet. That should be arranged to facilitate the bowel movements. It is done in the majority of cases by giving bulky foods, fruit, and salads that contain a great deal of organic acids and cellulose, matter which is not digested, bulky foods serving to bring on more efficient peristalsis. I have already spoken of water. Enough water should be given to the patient. Butter is another substance which is good. Special forms of diet have sometimes to be arranged to suit the condition of the stomach, but in a general way a very liberal diet should be maintained. Bran acts well—bran bread. Some physicians (Dr. Gallant) prescribe bran flour, prepared or eaten in its natural state, one tablespoonful, three or four times a day.

Schmidt, acting on his theory that there is too great utilization of the foods taken, introduced agar as a remedy for constipation, but he found that while agar is good it is not enough to bring on a movement, so he combined it with cascara, to regulate the bowels. A few years ago I thought I would like to have some other remedy which would act in a similar way, and I made a combination of phenolphthalein and agar. This contains 3 per cent. of phenolphthalein and taken twice a day, or sometimes three times a day in teaspoonful doses, is very beneficial. One advantage of these agar preparations is that the remedy in the agar does not come out quickly from the agar substance, but is absorbed slowly through osmosis, and in this way covers a large area of the intestine. The intestine is long, and if you want to give special remedies for the bowel it is well to give them so that they shall be spread out over a large area. This the agar does, and it also takes up water. That is another quality which is favorable for affections of the bowels, for it lubricates the fecal matter. In constipation too much moisture is taken away by the system, and the fecal matter is too dry and

can hardly be pushed along, but the agar swells up and the water in it does not come out; the agar has a greater affinity for the water and retains it, while with other matter it is released more readily. That is the idea in combining agar with remedies for the bowels. I have carried the same principle further and have combined agar with tannic acid for the treatment of diarrhea—to obtain the effect of lubrication and of having the remedy carried over a large area.

Phenolphthalein-agar, a teaspoonful twice a day, is the usual dose. This should not be ground up too fine; if it were in the form of a powder it would be partly absorbed and less efficacious. For this reason the agar flakes should be somewhat bigger. Then I have a combination of rhubarb agar, also about three per cent. This is a little weaker than the phenolphthalein-agar and can be taken in the same quantity as the latter. Although as a rule we should not use too many remedies to cure constipation, still we often cannot get along without them. It is easy enough to say, do not take anything, but if the patient has no movement, he will be dissatisfied, and will leave you and go to another physician. Therefore mild cathartic remedies can and should be given, but the patient should be impressed with the importance of taking as little as possible; trying a certain amount for a little while, and then reducing it slowly and little by little. That is the principal thing. If you can get the patient to do that, you can get him to a point where after a while he does not need to take anything.

Along with the mild cathartic remedy you can also institute a proper diet and a right way of living. There are many other means of helping constipation. There are physical means of treatment, such as massage of the bowel and abdomen. That can be done either by an experienced masseur or by automassage. The patient can massage the abdomen every morning for five minutes or so, going along with his closed fist over the colon. Professor Sahli advises for this purpose a five-pound cannon ball, which the patient passes over the abdomen, rolling it around in a circle. There are some cases, however, in which massage is not advisable—cases of very lax abdominal walls, especially where the organs are not well protected, so to speak. In such cases, if the massage is a little too rough, inflammation of some organ may result.

Electricity has been applied by putting one electrode on the abdomen and the other at the back or in the rectum. That is best done with an electrode which permits the water to come slowly into the rectum. Static electricty has been employed by Doumer and others in France. Then there are gymnastic exercises for the abdominal wall—bending, sitting-up, rowing, walking, etc.—all that comes under the head of exercises for the strengthening of the abdominal muscles.

Hydrotherapy also has been used—having a douche for the abdomen, going over the entire abdomen, over the colon, etc. Injections into the bowel also form another mechanical measure—plain saline injections, about a quart at a time, may be employed. I usually advise that these be given in the evening, so that the patient has a chance to have a bowel movement spontaneously, and if that fails he can then take the injection.

Kussmaul and Fleiner recommended olive oil injections as a remedy for habitual constipation, and there is a great deal of good in this treatment. Give six to ten ounces of olive oil at blood temperature, injected into the bowel, to be retained over night, and there is usually a movement in the moring. This can be used every night for three or four weeks, then every other night for three weeks, and then twice a week for a long while. Sometimes this treatment is followed by very good results. It is especially important in spasmodic forms of constipation. Boas believes that there is no special form of spasmodic constipation. Schmidt and others think that it is only caused by inflammatory conditions accompanying habitual constipation. This form is benefited more than others by the olive oil treatment. Olive oil in tablespoonful doses has been given by the mouth by Westphalen. Later on liquid paraffin was advocated by Sir Arbuthnot Lane, of London, for the same purpose. A teaspoonful to a tablespoonful of liquid paraffin given twice a day acts well in some cases. The latter has also been advantageously employed in the form of small rectal enemas of three to six ounces.

Ultimately, operations have been advocated for the treatment of habitual constipation. I am not much in favor of them. Dr. Lane's operation and the autointoxication theory go together. I spoke against the one before; I speak against the other now. A patient is frightened, and told that he should be operated upon. He does not know what to do, and he is operated upon. Afterward he may or may not be better, but it is not the thing to be done excepting in rare instances.

Not long ago I was called in consulta-

tion, and was told that the patient had a pronounced Lane's kink and autointoxication, and that operation was required. The patient was ready, but said that he wanted my opinion first. I did not want to say anything against the opinion of the attending physician, but suggested that a certain form of treatment be tried for a week, and if the patient did not improve that he could then be operated upon. In a week the patient came to me and said he was feeling better, but that he was still urged to have an operation. I told him that he was his own master and could do as he liked. He was not operated upon, and he is now very well. One should not be too hasty in recommending an operation for this condition. There is no need for haste. Try one thing, and then another, and if the patient is not in a hurry it is nearly always possible to relieve the condition by the measures above described.

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TREATMENT OF PUERPERAL SEPSIS

J. C. Hirst, of Philadelphia, writes that it is evident that not every case of fever in the puerperal period is of septic origin and it should be remembered also that there are two varieties of sepsis, sapremia, due to saprophytic infection and septicemia due to actual bacterial invasion, usually streptococcic and frequently invading directly the blood-current. It is the latter that he specially discusses, as the former yields promptly to disinfection. Septicemia is far the more dangerous and less easy to diagnose. The general symptoms are chills, rapidly rising temperature and pulse and physical depression out of proportion to the other symptoms. The local symptoms are foul discharge, which is sometimes absent, reddened and edematous labia, false membrane formation and a subinvoluted and tender uterus. The pelvic exudate is usually late when it occurs. Leukocyte-counts are usually higher than in any other form of fever in the puerperium, and cultures properly taken with the strictest aseptic technic are often of great value. The prophylactic measures, strict asepsis observed by both physician and nurse, are given in detail. The first curative step is local disinfection of the genital canal erroneously spoken of as curretting, the method of which is described minutely. It should not be done with the patient in bed but on a table (an ordinary kitchen-table will suffice), and an anesthetic is not necessary. Careful cleansing of the parts followed by a 1:4,000 mercuric chloride douche precedes and follows the cleansing of the uterine cavity. If the temperature does not subside or should rise again, intrauterine douching alone is advised and the best solution is 2 drams of tincture of iodine, 8 ounces of 95 per cent. alcohol, and sterile water enough to make 2 quarts. Once daily is sufficient, and the two-way catheter should have ample provision for return flow. There is only one contraindication to this treatment, that is, phlebitis, but it is not always possible to tell when this exists and which is the lesser risk. If a sharp rise in temperature follows the disinfection, further local treatment should not be countenanced. A routine use of vaginal uterine douches, purely as a preventive of infection and with an absence of symptoms specially calling for them, is not recommended. An easily digested, largely liquid diet should be given in large quantities and Hirst advises alcoholic stimulation as far as tolerated. Other stimulants are often needed for the heart, but a pulse under 110 does not ordinarily require stimulation. Artificial leukocytosis is theoretically beneficial, but Hirst is not enthusiastic as regards the benefit of a fixation abscess. Enteroclysis is also mentioned as sometimes worth a trial. Serum treatment is mentioned as sometimes giving beneficial results when used early and in sufficient doses. The serum must be fresh; it will not stand long transportation and it is also expensive. Sometimes a daily transfusion of normal human blood-serum from a healthy donor seems to have given benefit and is worth trying when antistreptococcic serum fails. The use of bacterins has been less satisfactory, and colloidal silver, Hirst thinks, is of doubtful utility, though as an unction it is harmless. As regards surgical treatment, he says every physician should be ready to give it if needed. Continual septic symptoms plus an abdominal mass, palpable above the symphysis or Poupart's ligament call for abdominal section. This abdominal mass almost always means a cornual abscess pointing toward the peritoneum, and he emphasizes the advisability of operation in these cases. Without operation the patients are doomed; but with it and with proper drainage (which is the main factor in success) 90 per cent. of them can be saved. Phlegmasia alba dolens is mentioned as a complication, and its treatment noticed. Its greatest danger is pulmonary embolism, which is increased by early activity or massage, and this should never be used.—Jour. A. M. A., June 13, 1914.

Progress in Materia Medica and Therapeutics

CALCIUM IN INFLAMMATORY CONDITIONS

The fact that much has been written recently concerning the use of calcium in inflammatory processes, induced E. Landsberg, of Halle, to study its effects in gynecological conditions. He used a 1 per cent. solution of calcium lactate subcutaneously. 10 Cc. of this were given every two or three days. As the skin is irritated if the entire amount is injected at one point, the author did not put more than 3 to 4 Cc. under the skin in one place and found that no irritation was produced.

Eighteen cases were treated in this way. In ten of these, large masses were present in the region of the adnexa and most of them showed symptoms of pelvic peritonitis. After treatment with calcium lactate six of the cases were discharged as cured, that is, examination no longer revealed abnormalities. In three cases slight thickening of the adnexa persisted, but there were no subjective symptoms. In two cases, which were subsequently operated on, Landsberg had the impression that calcium had been of benefit and as a result of its use, the operation was considerably simplified.. A large exudate in Douglas' cul de sac did not react to calcium, but, on the other hand, two cases of extensive parametritis did very well and in four cases of acute inflammation with irritation of the adnexa and of the pelvic peritoneum, equally good results were noted.

The patients were first treated in the usual way with douches, tampons and heat or cold locally. If no progress was made, calcium was brought into play. In some, calcium was used alone, in others calcium in combinations with the older methods, was employed.

As in the conditions referred to above, we wish to check inflammation and stimulate absorption, it is well to use calcium in connection with a remedy that acts as an absorbent. At first when much local tenderness and rise of temperature exists, it is best to have the patient in bed and employ calcium only. Later, usually after a few days, when the acute symptoms have receded, measures to hasten absorption are indicated.

The author also recommends a 5 per cent. solution of calcium lactate for douches in vaginitis. Carbolate of calcium is of value in wounds, secreting profusely, the following formula being suggested: calc. carbolic, 10.0 to 20.0; zinci oxidi, amyli aa ad 200.0.

His experiences lead Landsberg to conclude that the calcium treatment should be introduced into gynecology, not only because it does not affect the organism as a whole detrimentally in any way, but also because, as experiments have shown, the general condition is improved by it.—Therap. Monatshefte, No. 5, 1914.

TREATMENT OF MALARIA IN INFANTS

W. Weston, of Columbia, S. C., writes that if malaria in infants is seen during the early part of the paroxysm he gives a mustard bath, applies an ice cap to the head, and if the infant is having convulsions gives sodium bromide and antipyrine. If the infant is in this stage, frequent tepid spongings give great relief. The bowels should be promptly and freely opened by the use of frequent small doses of calomel. Other medicinal treatment consists in the administration of quinine, preferably bisulphate in aqueous solution. The stomach of infants suffering from malaria is almost invariably very irritable, and it is therefore important that quinine should be given only at those times when it will be most effective in destroying the parasites. Weston advises that in benign attacks no quinine be administered for at least three hours after the temperature becomes normal. Then administer 2 grains bisulphate in aqueous solution every two hours, day and night, for twenty-four hours, then 2 grains of the solution every four hours for twenty-four hours, then 3 grains morning and evening for three weeks. It absorbs more readily when the stomach is empty. If difficulty is found in retaining the bisulphate, euquinine may be tried. In pernicious malaria quinine hypodermically is the only method to be relied on.

The best salt of quinine for injection in Weston's opinion is the bimuriate. The bimuriate of quinine and urea is convenient and reliable and the 3-grain tablets contain about 2½ grains of the quinine salt. The tablet should be dissolved in distilled water or merely sterilized water. The needle and syringe must be sterile and the skin sterilized. The solution is then

injected deep into the muscles. This procedure may be repeated every six hours. Finally the rectal administration of quinine may be resorted to. Here the bimuriate in doses three times as large as would be given by the mouth or intramuscularly should be given in 2 ounces of warm water. This injection should be given high up in the rectum. It is well to add 5 drops of tincture of opium to the solution to prevent tenesmus and aid retention.—Archives of Pediatrics, April, 1914.

PEMPHIGUS TREATED BY QUININE INJECTIONS

Leszczynski has attempted the treatment of pemphigus with quinine intravenously. Quinine was recommended by Mosler in 1890 in cases of pemphigus, and for ten years quinine has been employed in most cases of pemphigus at the Lemburg clinic, with no doubt as to its favorable action. The good results attained in many cases of skin disease by blood-letting followed by the injection of salt solution and the action of intravenous injections of salvarsan in syphilis, stimulated Leszczynski to try intravenous injections of quinine in pemphigus. Three cases of pemphigus, in all of which the mucous membranes were prominently affected, were treated by this method, beginning with small doses of quinine, and increasing up to a grain, given every other day. All the patients asserted that as early as the day after the injections, they experienced less smarting and pain from the oral lesions. The skin proved more refractory to the injections than the mucous membranes, but began to improve after several injections. The writer declares that there can be no doubt as to the very rapid amelioration of the oral and mucous membranes lesions under this treatment, and a less rapid, although marked, improvement of the skin lesions. With regard to permanent improvement, new lesions appeared during the treatment in all three cases. The first patient, to be sure, showed few and slight recurrences, and was discharged well. No return had yet occurred. The second, a more severe case, continually exhibited new lesions during the treatment, although he was free at the time of writing. In the third case, the mucous membrane of the mouth improved more quickly than in either of the others, and remained good during the whole time of observation. On the mucous membrane of the vulva and on the skin, new efflorescences appeared during the treatment, and the patient was not free from the trouble. The writer truly says that it may be a question whether the benefit in these cases comes from the quinine or from the salt solution in which it is given. On the one hand, we know that quinine internally has given good results in pemphigus, and on the other hand Bruck and Simon have shown the good effects of drenching with salt solution. On both grounds, therefore, the use of the quinine injections seems to be justified. It would be of interest to know if other bullous and exfoliative dermatoses may be benefited by quinine injections. In a case of exudative erythema multiforme, with bullae and exfoliative changes of the mucous membrane of the mouth, healing of the mucous membranes was attained after four injections of quinine, and no new appearances were observed during the succeeding two weeks. The writer concludes, on the strength of these three cases, that injections of quinine salt solutions have a favorable influence on the course of pemphigus, and hasten epithelial regeneration. They also alleviate subjective symptoms and improve the general condition.—Boston Med. & Surg. Jour., June 11, 1914.

BROMURAL AS A SEDATIVE

According to W. Badtke, of Berlin, the symptom, inability to fall asleep, is of more importance as an indication for the administration of bromural than the disease itself. Bromural acts only when the sensory nerves are at fault; on the pathological symptoms of the motor tract it has no influence. The lack of co-ordination in the circulation of the neurasthenic is done away with by the remedy, and heart and vessels are again enabled to functionate together normally.

The author used the preparation as a nervinum in many forms of nervousness and neurasthenia, as well as in cardiac and intestinal neuroses. Even in cases in which nervous symptoms were apparently due to a decrease of certain internal secretions, bromural proved efficient. In many cases of mild insomnia, such as frequently result from overwork, nervous strain, worry or late hours, it had a prompt hypnotic effect. One or two tablets induced sleep in ten to fifteen minutes. The next day, the patient awoke refreshed and no unpleasant symptoms were noted. Its harmlessness renders its use in pediatrics possible. The organism of children reacts to drugs rather variably and as it is also difficult in pediatric practice to decide on the correct dosage, the administration of narcotics is always very risky. Accordingly, bromural seems especially suitable for this field and on account of its efficient but harmless action, the opportunities for its use in

children, are very numerous. Satisfactory results were obtained with it as a simple hypnotic for restlessness at night and in combination with codeine for pertussis. According to the author it may be given even to infants without hesitation, as is shown by the fact that in a case of rickets with intestinal distention, it succeeded in quieting the child.

The experiences of the author therefore lead to the conclusion, that bromural is a harmless sedative and hypnotic, acting promptly with certainty and with no after-effects.—Fortschritte der Med., 1914, No. 10.

INHALATION OF TINCTURE OF STROPHANTHUS IN HEART DISEASE

J. Moczulski finds tincture of strophanthus more potent in heart disease when inhaled than when given in any other way. Theodor Heryng by his recent work on inhalation apparatus has appreciably advanced treatment by inhalation, and his thermo-regulator has made possible the inhalation of drugs at different temperatures, and his thermo-accumulator has facilitated the inhalation of gases. The author has worked with Heryng's apparatus and has strictly followed his instructions, the patient sitting with his tongue held out and his mouth four fingerbreadths off the inhalation tube. The usual amount of strophanthus given in one day was 10 minims of the tincture dissolved in 30 Cc. of distilled water. This treatment increased diuresis, diminished edema and cyanosis, and raised the blood pressure appreciably. Often one inhalation benefited the action of the heart strikingly, and strophanthus appears to act even more rapidly when inhaled than when injected intravenously. The technique is simple and the desired effects may be obtained with exceedingly small quantities of the drug. The author gives details of five cases. One patient was a man, aged 50, suffering from emphysema, chronic bronchitis, arteriosclerosis, and faulty action of the heart. For two years he had suffered from dyspnea, cough, headache and insomnia. Respiration was 36, the pulse 100. The feet were dropsical, and the lips, cheeks, and fingers were cyanosed. Dry râles were audible all over the lungs, the respiratory sounds of which were feeble. The daily excretion of urine was about 300 Cc. For ten days a milk diet was combined with digitalis and strophanthus given by the mouth. The excretion of urine rose to 700 Cc., but otherwise little improvement was effected. When, however, strophanthus was inhaled, the dyspnea and cyanosis diminished appreciably, the respiration fell to 26, and the pulse to 94, while the excretion of urine rose to 1,500 Cc. After daily inhalations of strophanthus had been given for five days, the urine rose to 2,500 Cc., and as soon as the inhalations were omitted, it fell to 500 Cc., to rise again to 2,000 Cc. as soon as the inhalations were resumed. In another case a patient, aged 63, was so alarmed by the violent diuresis following one inhalation that he absolutely refused to continue the treatment.—Wien. med. Woch., Jan. 8, 1914, per Brit. Med. Jour.

TREATMENT OF OCULAR SYPHILIS

Not until recently has the problem of the relative value of salvarsan and mercurial treatment in ocular syphilis approached a definite solution. On some points there is still diversity of opinion, and it is hoped that soon the aggregate of clinical data bearing thereon will become so large as to leave no room for doubt. That simultaneous administration of salvarsan and energetic mercurial treatment, as Wechselmann maintains, is always dangerous, and that mercury should never be given before, but only a number of days after the last salvarsan injection will doubtless seem questionable to many. At all events, the second of these strictures need not necessarily apply to ocular syphilis, for in his recent report before the French Society of Ophthalmology, L. Dor, on the basis of a comprehensive study of the entire question recommends in syphilitic, plastic, papular, or gummatous iritis, the administration of mixed mercurial and iodide treatment for a few days before giving neosalvarsan. Careful use of atropine is, of course, also required. In cyclitis and gummata of the ciliary body, intensive mixed treatment is first indicated together with atropine and hot compresses, again to be followed by the administration of neosalvarsan. In acute optic neuritis, on the other hand, salvarsan should be given first, as advised by de Lapersonne, and only afterward a series of twelve intravenous injections of mercury cyanide. Likewise in primary syphilitic involvements of the lids and conjunctiva, the immediate use of salvarsan is indicated. In scleritis and in choroiditis, mixed mercurial and iodide treatment appears to be alone required, though its efficiency is far greater in the former than in the latter condition.

In the interstitial keratitis of congenital syphilitics, Dor has not found salvarsan perceptibly superior to mercury alone; neither has the conjoint use of the two drugs proved curative. The essential point

in connection herewith is to detect latent syphilis in apparently normal children by means of the Wassermann reaction, and to apply prophylactic treatment in the form of mercurial inunctions or, where knowledge of the condition is to be withheld from the mother, by giving calomel internally in doses of 0.01 to 0.04 Gm., according to age, mixed with 0.49 to 0.46 Gm. of milk sugar. The use of a suppository containing 0.05 gram of neosalvarsan once weekly is also advised. Both interstitial keratitis and optic nerve atrophy in the child can thus be prevented.

Apart from the question of the localization of ocular syphilitic disease as influencing the treatment required, stress should be laid on the virulence of the spirochete in its local effects. De Lapersonne accordingly divides cases of ocular syphilis into three groups. In the first, comprising cases of tabetic atrophy, chorioretinitis, and iridochoroiditis of long standing, relatively mild treatment, consisting of intramuscular injections of one to 100 mercury bichloride in oil, or of mercurial inunctions, is indicated. In the majority of cases of ocular, as well as of cerebral syphilis, comprising the second group, more energetic treatment is required—series of twelve to fifteen intravenous injections, on alternate days, of a one to 100 solution of mercury cyanide, followed by three to four weekly injections of 0.25 to 0.35 Gm. of salvarsan or 0.3 to 0.4 Gm. of neosalvarsan in twenty Cc. of sterile distilled water, and after this a fresh series of the cyanide injections. Finally, where still more prompt and intense treatment is required, as in beginning optic meningitis, three to four injections of salvarsan should be given at the outset, followed by mercury cyanide Salvarsan, according to Dor's studies, in general acts better when employed after mercury than before or with it, although, he adds, this cannot yet be positively established. In ocular syphilis with albuminuria the use of salvarsan is permissible; according to some, it is better borne than mercury and acts more favorably on the secondary syphilitic nephritis.

On the whole, Dor finds grounds for concluding that there are many syphilitics who would now be blind if they had not received salvarsan, but only mercury and iodide. The new arsenic compound does not succeed, however, in curing all forms of ocular syphilis. Mercury and iodide are still indispensable to the ophthalmologist, and for progressive optic nerve atrophy some new and efficient remedy, perhaps a phosphorus compound, is still a crying need.—N. Y. Med. Jour., May 30, 1914.

LOCAL ANESTHESIA

J. J. King, of New York, describes a method of local anesthesia which he has found most satisfactory for resection of the nasal septum. Half an hour before he begins, the patient takes by mouth 1/150th grain of scopolamine hydrobromide to allay nervousness and as the therapeutic antagonist to cocaine. Then he applies with a cotton-wound applicator a 20 per cent. solution of cocaine hydrochloride over every part of the mucous membrane of the septum and repeats it immediately. After the second cocaine application he makes a similar one of a 1:1,000 epinephrin solution and following this an injection under the septum perichondrium and periosteum on each side of from 8 to 10 Cc. of a sterile solution to which 5 minims of a 1:1,000 epinephrin solution has been added immediately before the injection. This completes the anesthesia and infiltrates every portion of the septum membrane, blocks off the nerves, prevents shock and renders the operation practically bloodless. It also aids in elevating the perichondrium from the cartilage and makes the dissection easy. He uses only 5 minims of epinephrin solution because this does not exceed the physiologic dose of the hypodermatic injection and he has found it in his experience sufficient to render the field bloodless without producing toxic symptoms.—Jour. A. M. A., May 30, 1014.

DOSAGE OF NARCOPHIN

S. Hirsch, of Berlin, states that the indications for the use of narcophin, the meconate of morphine-narcotine, are the same as for morphine. It has certain advantages, not possessed by morphine. The literature on the subject shows that as a narcotic in surgery it does not influence respiration, rarely causes vomiting, and has a more lasting action than morphine. In obstetrics it is also of advantage, a deleterious effect on the child being a rare occurrence. Narcophin is also advocated for the treatment of the morphine habit as, on account of the long euphoria it produces, the number of injections can be reduced early in the course of the treatment. Furthermore, cyanosis and Cheyne Stokes breathing, which are prone to occur in those addicted to morphine, are not observed.

The author values narcophin especially because patients bear it better than morphine and because its effect is of longer duration. The dose, 0.03 Gm., the amount contained in the ampules on the market, is however, not sufficient for all conditions, as, for instance, the severe pain of renal

or gallstone colics. In such cases Hirsch uses 1½ to 2 ampules; that is 0.045 to 0.06 Gm. of narcophin. As one might ask why not use 0.02 Gm. of morphine and obtain the same result. Hirsch states how narcophin and morphine differ in action. Narcophin produces its effect less quickly than morphine and seems to paralize the nerve centers more slowly, thus bringing about a gradual quieting of the patient, an effect which, however, lasts much longer than if it were produced rapidly by a hypodermic of pure morphine. It has also been observed that after the immediate effects of 1½ to 2 ampules of narcophin have worn off, there is less of a feeling of dulness and lassitude, so often noted after large doses of morphine. If one remembers that larger doses than 0.03 Gm. are indicated in some instances, good results are to be obtained with narcophin.—Deutsche med. Woch. No. 14, 1914.

TREATMENT OF LINGUAL TONSIL COUGH

A congested lingual tonsil as the cause of a troublesome, dry cough is frequently overlooked. This is a common condition, and may occur without bronchitis, tracheitis or laryngitis. It may also occur without a pharyngitis, although it is frequently associated with it. It is frequent in cigarette smokers, and more or less in all smokers, but often occurs in patients who do not smoke. If a person has had this trouble once he is likely to have it recur with every cold. It not infrequently happens that a patient is suspected of having incipient tuberculosis, just because he has a lingual cough, especially if the hard, rasping cough has produced a blood-tinged mucus. Such a cough is generally worse when the patient lies down and is precipitated by any change of temperature. If the cough begins there is a shower of coughs, until the patient has literally scraped the part irritated, much as one scratches an itching spot until it almost bleeds. The cause of this cough is quite generally referred by the patient to a tickling well down under the sternum. The patient may not always have a cough from lingual tonsil irritation, but may complain of a burning sensation which he may term "heartburn."

The diagnosis of the condition is readily made by the use of the laryngoscope, when the lingual tonsil at the base of the tongue will be found many times, red and inflamed, sometimes heavily coated, and at other times with large papillae projecting from the mucous membrane.

Emphasis should be laid on the fact that cough mixtures will not cure this cough. It is true that some gummy, gelatinous, sweetish, thick, syrupy preparations may so coat the lingual tonsil when they are swallowed as to ease the cough for a time; but what becomes of the stomach from such medication? Gargling may not reach this region; only patients who have been educated to do so can gargle to wash the lingual tonsil. Gargles should always be ordered, however; they will at least soothe the rest of the throat. Efficient gargles are the liquor antisepticus alkalinus of the N. F., which should be diluted with an equal part of hot or warm water; or a Seiler's tablet solution, one tablet dissolved in 2 or 3 ounces of warm water; or a simple and efficient gargle may be made by adding one-fourth of a teaspoonful of sodium bicarbonate and one-fourth of a teaspoonful of salt to half a glass of warm water. Another useful gargle is the following:

Acidi Borici ..... ℥ss
Potassii Chloratis ..... ℥i
Aquae Menthae Piperitae ..... fl℥vi
M. Sig.: Use as a gargle every 3 or 4 hours.

At times when the throat is flabby, a tannic acid gargle is of value, such as:

Acidi Tannici ..... grn. xl
Glycerini ..... fl. ℥ii
Aquae Gaultheriae q.s. ..... fl. ℥vi
M. Sig.: Use as a gargle twice a day.

Of course, sedative cough mixtures are of benefit in reducing the irritation of the nerves of the throat, and ammonium chloride will stimulate the mucus secretion and perhaps, sooner or later, also help the condition, but as above stated, such treatment seems unnecessary and is generally unsatisfactory in this kind of a cough. It is generally much better to give no medicine at all by the stomach. If the throat is dry, small doses of sodium iodide given three times a day will increase the mucus of the pharynx and lingual tonsil region and may aid in curing the cough.

The proper and only satisfactory treatment is by local applications. This irritated glandular tissue should be swabbed daily for a few times with boroglycerid, or less frequently with a solution of iodine such as:

Iodi ..... grn. xv
Potassi Iodidi ..... grn. xlv
Glycerini ..... fl. ℥i
M.

The patient should understand that if he wishes to recover quickly from his cough, daily visits to his physician will accomplish more in a week than will three months of intermittent treatment.—Jour. A. M. A., May 23, 1914.

TREATMENT OF MUSHROOM POISONING

A. Pic and J. F. Martin report a case in which severe poisoning by *Amanita phalloides* was successfully treated by the production of a fixation abscess. The symptoms of the poisoning came on only after a number of hours after the ingestion of the fungus and as the mushrooms had already passed from the stomach into the intestines emesis was out of the question. For four days after the admission of the patient to a hospital, injections of 10 ounces of normal saline solution were given twice daily to wash the blood. Sedative hot enemas were also given, and the patient bathed in water at body temperature for ten minutes, three times daily. The heart action was stimulated with injections of camphorated oil. To the fixation abscess, however, more than to any other measure, seemed due a sudden improvement in the patient's condition, which took place on the ninth day. This was the day on which fluctuation was first noted in the abscess. Diuresis set in, and the pain and all other symptoms were relieved, soon after to disappear entirely. The authors argue that, just as in infections the causative microorganisms, and in lead or mercurial poisoning the respective metals are found in the pus of a fixation abscess, so in *Amanita phalloides* poisoning the phallin becomes fixed in the abscess. In previous experience with this method of treatment in a series of cases, the authors had observed that whereas, among thirty-eight previously reported cases of phallin poisoning the mortality had been 86.8 per cent., that among twenty-three patients suffering from the same variety of poisoning, and treated with fixation abscesses, the mortality had been only 39 per cent.—Lyon Médicale per N. Y. Med. Jour.

EXTRACT OF CORPUS LUTEA IN PROFUSE MENSTRUATION

A difficult chapter in gynecology is the control of profuse menstrual bleeding at the time of puberty. In the majority of cases, this is not due to pathological conditions of the uterus, but to improperly adjusted ovarian function. There is at our command quite a list of remedies that will control uterine hemorrhage, but they all have the fault that they merely combat the symptom, but do not affect the real cause of the trouble, namely the ovaries. The connection between the ovaries and normal or profuse menstruation cannot be discussed in detail here, but according to our present knowledge, there is much evidence in favor of the fact that menstruation does not occur when a fully developed corpus luteum exists and that the latter's presence prevents the return of menstruation during pregnancy. Practically this would mean that extract of corpora lutea vera should have a favorable influence on profuse menstrual bleeding, a supposition that proved correct according to Landsberg's observations. He treated seven cases of profuse menstruation with an extract of corpora lutea vera and the bleeding stopped in every case. 1 Cc. was injected subcutaneously every other day and repeated six to twelve times in accordance with the severity of the case. Two of the cases of profuse bleeding at puberty, treated in this way, were observed for two or three months and menstruation proved to be regular and not profuse. In a married woman, who had had hemorrhages for years and had been treated in various ways, the preparation controlled the bleeding after the third injection and recurrence did not take place during the two weeks, in which the treatment continued. A few weeks later, however, word was received that a hemorrhage had again taken place. Opportunity for further treatment was unfortunately not obtained.

Considering his results as a whole, the author thinks it justifiable to recommend extract of corpora lutea vera for uterine hemorrhage, especially if occurring at puberty.—Therap. Monatshefte, No. 5, 1914.

TREATMENT OF ANKYLOSTOMIASIS

C. M. Fauntleroy writes that before the attack on the parasites is begun, the patient should be carefully examined as to his internal organs. If practicable, the degree of anemia should be accurately determined, as thymol is dangerous in patients with diseased organs or extreme anemia. In the average case, after dieting and catharsis with magnesium sulphate, on the preceding evening, one gram of thymol should be given in the morning at 6 o'clock, another gram at 8, and a dose of magnesium sulphate at 10. No food should be given until 11, when tea without milk or a little broth may be allowed. Upon taking the thymol, and until a half hour after the second dose, the patient should lie down—at first on the right side to favor rapid entrance of the drug into the intestine. If the bowels do not act vigorously in about four hours after the last dose of thymol, another dose of magnesium sulphate should be given. The treatment should be repeated, if necessary, once or twice a week until the ova can no longer be found in the feces on repeated microscopic examination after two or three

weeks. A mixture consisting of oil of eucalyptus, 30 minims; chloroform, 15 minims; and castor oil, 10 grams, is recommended instead of thymol in children and debilitated adults. It is safer, and can be repeated on successive days. The bowels are cleaned out by a saline purgative the evening before, and the foregoing mixture is given in halves at a half hour interval. The area of skin showing the eruption—"ground itch"—should be cleaned with green soap and water and then dressed with a lotion of one in 50 or one in 100 phenol, or with a phenolized salve. The infected area should be bandaged and the patient required to wear shoes and stockings. Iron should be given internally upon completion of the thymol or other parasiticide treatment.—Amer. Jour. Trop. Diseases, April, 1914.

A BIOLOGICAL TREATMENT OF CANCER

C. F. D'A. Francis, of Brooklyn, writes that thyroid gland has materially assisted those suffering from cancer. In a recent article he described an oxidizing mixture that is harmless to the organism and which he states will effect a cure in cancer. Thyroid gland fulfills the function of such an oxidizing agent. It increases the nitrogenous and purin output of the body. Thyroid, in combination with the deficient salts, hemoglobin and the antihemolysin cholesterin seems to be a rational mode of treatment. Ross, of Liverpool, states kreatin, one of the purin bases, with globin, prevents the proliferation of the cancer epithelium. Hemolysis being a frequent phenomenon in cancer, he uses the antihemolysin cholesterin. With the following mode of treatment he states that he has effected what seem cures in some twelve cases. Some of these cases were inoperable cancer of the breast, others abdominal cases. The length of time of treatment was three months. Cancerous ulcers of a superficial type scabbed over in a week.

FORMULA I

Thyroid gland, desiccated.0.12 to 0.25 Gm.
This should be taken an hour before the following hemoglobin mixture:

FORMULA II

Sodium Chloride	2	Gm.
Potassium Sulphate	0.070	Gm.
Sodium Sulphate	0.063	Gm.
Calcium Phosphate	0.075	Gm.
Magnesium Phosphate	0.055	Gm.
Manganese Dioxide (intravenously 0.008)	0.032	Gm.
Cholesterin	0.3	Gm.
Hemoglobin	3.25	Gm.
Boiled Water	250	Cc.

Dissolve the soluble salts in the boiled water, filter, then add the other ingredients. This dose should be taken an hour before meals. If the intravenous injection is desired, it may be employed once a day, tricresol 0.2 per cent. being added as an antiseptic. Thyroid gland may be given intravenously or hypodermically in the dose of 0.06 to 0.12 Gm. once a day. If Formula II is put up dry in containers, one should add thymol 0.008 Gm. as a preservative; when it is to be used one should add 250 Cc. of sterilized water. With this mode of treatment one may prevent proliferation of the cancer epithelium and hemolysis, increase oxidation, and favor the action of the protective ferments.

ANESTHESIA IN EYE AFFECTIONS

The interesting observation has been made by H. Gebb that the anesthetic properties of novocaine are much increased by the addition of potassium sulphate. The best results were obtained with the following:

Novocain	grn. vijss
Sol. Potassii Sulphatis (2%)	f. ʒv
Sol. Potassii Chloratis (0.9%)	f. ʒi¼
Sol. Suprar. Hydrochl. (1:1000)	gtt. xx

The solution is excellent for all operations about the eyes and complete anesthesia usually sets in after ten to fifteen minutes. The solution is to be used only for infiltration; for instillation there is no special advantage over a simlpe novocaine solution.—Muench med. Woch., March 3, 1914.

TREATMENT OF SYSTEMIC BLASTOMYCOSIS

A. M. Stober writes that of twenty-nine cases of systemic blastomycosis two-thirds occurred under the age of thirty-four years and all but two were in men. In at least fourteen cases the first symptoms were referable to the lungs, suggesting the respiratory tract as the usual route of infection. Pulmonary symptoms occurred sooner or later in all cases. The diagnosis must be based on demonstration of the blastomycetes in the sputum or in the pus of various lesions; the organisms are easily overlooked in stained preparations. Blastomycosis should be ruled out in all cases of chronic pustular or ulcerative skin lesions, wasting pulmonary disease, spontaneous superficial or deep abscesses, especially when connected with the bones, suppurative arthritis, and suspected Pott's disease. The prognosis in systemic blastomycosis is bad, only three cases of the series ending in recovery. In treatment, the influence of food, climate, and hygiene is important. Potassium iodide in large doses seemed to cure one of the three patients who recovered.

For the cough, pain, and insomnia, codeine is especially valuable. Excision of cutaneous lesions, aspiration and drainage of abscesses give good results. Solutions of copper sulphate and iodine were found useful for irrigation of abscesses. Vaccination with a filtrate or suspension of triturated membranes of the organism, grown at room temperature in bouillon for two to six months, was practiced in two systemic cases. One patient recovered, and the measure is considered promising by the author. A von Pirquet test performed with the suspension was found of diagnostic value, a distinct papule, persisting four days, being produced.—Archives Int. Med., April, 1914, per Med. Rec.

ANOPHYLAXIS AFTER FIBROLYSIN

A patient of Dethleffsen received nine injections of fibrolysin for peritonitic adhesions about the gall bladder. After the tenth injection, there was much subjective improvement, but an eruption suggesting measles appeared over the entire body. A second course of injections was begun three years later, when after the third and fourth injections chills and dyspnea set in. During this second stay in the hospital the region of the gall bladder had also been vibrated. A fifth injection was followed by the same symptoms. Examination of the organs was negative and the blood and urine were not altered. It is therefore probable that the symptoms were caused by the absorption of homologous proteids. The results of the treatment were exceptionally good and were permanent.—Therap. d. Gegenwart, Dec., 1913.

BEHAVIOR OF PHENOVAL IN THE SYSTEM

Phenoval is a bromisovalerylpara-phenetidin, introduced chiefly for its sedative and antineuralgic effect. W. Löb found that the drug is not split up in vitro by pepsin and hydrochloric acid or by alkaline pancreatic juice even if kept at 37° C. for twenty-four hours. In view of this fact, it is rather astonishing that decomposition occurs rather rapidly within the system. The breaking up into phenetidin and bromvalerianic acid begins in the intestines. The latter is absorbed and oxidized and the bromine is execreted partly combined to alkali, partly to organic complexes and appears in the urine and feces but not united to valerianic acid. Unaltered valerianic acid could not be found in the urine or feces, hence probably all of the bromine is absorbed. After a single dose of 1 Gm. phenoval excretion of the constituents by way of the urine is completed in twenty-four hours, by way of the feces in forty-eight hours. When phenoval was given successively for five days, very little bromine was found on analysis on the sixth day, showing that considerable retention of bromine takes place. It seems, therefore, that after a single dose, the system requires some time to decompose the drug, but if more is given, part of the drug is excreted unchanged while the decomposition products of the rest are cast off very slowly.—Therap. d. Gegenwart, April, 1914.

TREATMENT OF ACUTE BRIGHT'S DISEASE

N. Ortner writes that tannin has long been a favorite remedy in the reduction of albuminuria. In subacute nephritis following scarlet fever he frequently gives quinine tannate in doses of 1½ to 3 grains, two to four times a day. The author at present, however, prefers the alkalies to tannin, particularly sodium bicarbonate or lithium benzoate or carbonate. Their administration has repeatedly been followed by a rapid increase in the amount of urine and decrease in its blood content. The alkalies also reduce the congestion. Provisionally, methyl violet or methylene blue or sodium benzoate may be employed for their bactericidal effect. Methyl violet possibly also reduces the albuminuria. Sodium benzoate may be prescribed as follows:

Sodii Benzoatis	grn. l.
Syrupi Aurantii	f. ℥v.
Aquæ Dest	f. ℥vj

Of this solution one tablespoonful should be given every two hours. The salts of strontium have been strongly recommended by French authors and have been tried in Vienna on Drasche's recommendation. Strontium bromide, nitrate and lactate are used, the last most frequently. It is prescribed as follows:

Strontii Lactatis	℥jss
Syrupi Aurantii	f. ℥v
Aquæ Dest	f. ℥vj

Of this solution one tablespoonful should be given every two hours. Ortner considers that a venesection, taking 300 Cc. of blood from the vena pedica according to Baccelli's procedure is more effective than is the use of any styptic. In a short time, sometimes in twenty-four hours, it will reduce the blood content of long standing to a mere microscopic trace or may even cause it to disappear entirely from the urine.—Med. Record, June 20, 1914.

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JUNE, 1914

EDITOR'S NOTES

The Use of Remedies that Act on the Heart and Blood Vessels in Bronchitis

The introduction of new remedies is not the only way to further our therapeutic resources as far as the use of drugs is concerned. Much is also frequently gained by studying more closely the drugs that are well known, and by finding fields for their application, which are either new or have not received sufficient attention.

Thus it has been shown that hydrastis canadensis, usually employed only as a hemostatic, may replace the more poisonous atropine in the treatment of profuse sweats. More recently the fact has been established that preparations derived from the adrenal gland, used heretofore chiefly to stop hemorrhage, may be employed with great benefit in relieving asthmatic attacks. The same may be said of extracts of the hypophysis.

In a recent article, M. Saenger, of Magdeburg, refers to these facts and also recalls that in the early nineties he showed that fluid extract of hydrastis canadensis possesses properties that render it of advantage in the treatment of bronchitis, no matter whether tuberculosis exists at the same time or not. In a series of cases of bronchial catarrh with tenacious, mucopurulent sputum, it was found that the administration of twenty to twenty-five drops of this preparation, three times a day, facilitated expectoration and that the sputum became less purulent and diminished in quantity rapidly, while the cough was gradually relieved entirely. Later hydrastine hydrochloride was used and similar good results were noted, an advantage of this preparation being its greater reliability. A five per cent. solution of hydrastine is used, an average dose of ten drops three times a day, giving the best results.

The question then arose whether other pharmacological agents, resembling hydrastis in action, were capable of producing effects in bronchial affections, equally as favorable as those just mentioned.

Adrenalin, renoform, suprarenin were given in ten-drop doses of a 1:1000 solution three times a day, whereupon the secretion decreased rapidly, it was expectorated more easily, its character improved, and above all the cough became less.

Similar capabilities belong to caffeine and its salts. Caffeine sodium benzoate is especially to be recommended. The proper dose of a 10 or 20 per cent. solution in water, is ten drops three times a day.

Digitalis also may influence chronic bronchial affections favorably. A careful investigation of its properties in this respect was not made by Saenger, because it did not seem worth while in view of the fact that remedies, less poisonous in character, are at the disposal of the physician. Likewise other drugs, resembling digitalis in their action on the circulatory organs, were not investigated in this respect.

A large experience with hydrastine, adrenalin and caffeine sodium benzoate in bronchial catarrh must lead to the conclusion that they are of great value. With the possible exception of potassium iodide, no remedy seems to facilitate the expectoration of the bronchial secretions as do these. As potassium iodide produces disagreeable symptoms in many cases, other remedies that can equal it in effectiveness, are, of course, welcome. It is true that at first adrenalin, caffeine and hydrastine do not influence the cough as favorably as do the narcotics; later on, however, their efficiency increases and is more lasting. This is probably to be attributed to the fact that the character of the sputum improves more or less rapidly so that it is less irritating to the mucous membranes, while its quantity is correspondingly diminished. It is evident that remedies, capable of producing the changes just mentioned and not only acting symptomatically, are certain to be of benefit in the form of bronchial affection under consideration. The same good results are frequently noted, when a tuberculous lesion of the lungs coexists with the

bronchitis, and naturally the general condition of the patients is benefited thereby.

Some of the remedies just discussed, produce no detrimental effects at all, others do so to a slight degree only. Thus hydrastis after prolonged use is apt to cause bloody expectoration, probably due to the fact that the vaso motor centers, being stimulated at first, are later on paralyzed to a greater or less extent.

Adrenal preparations, as a rule, when given per os, produce no annoying symptoms. They should, however, be administered in a quarter or half a glass of water, as otherwise circumscribed areas of marked anemia may occur, often accompanied by nausea. Caffeine also, if prescribed with caution and with due regard for the condition of the circulatory system, is borne without trouble.

Regarding an explanation for the favorable action these preparations have on catarrhal conditions of the bronchi, it seems reasonable to attribute it partly to the contraction of the peripheral vessels and partly to an increase of the force of the cardiac contraction, the latter serving to prevent local circulatory disturbances. In a similar way one can probably also account for the fact that the adrenal preparations as well as caffeine and digitalis can be administered with benefit in the treatment of attacks of bronchial asthma.

In connection with asthma, it may be worth noting that the method of giving adrenal extracts in this condition is of less importance than many authors, advocating its use, lead one to believe. Its administration per os, has often proved very successful. It has frequently been observed that mild cases of bronchial asthma, which had persisted for a long time, were apparently cured after a short period of treatment with ten drops of a $\frac{1}{10}$ per cent. solution of adrenalin or a $33\frac{1}{3}$ per cent. solution of caffeine sodium benzoate, three times a day. Even in severe cases, in which prompt relief is a necessity, twenty-five to thirty drops of the solutions mentioned, taken internally, have the desired effect. If one favors the more reliable subcutaneous administration, but does not wish to cause the unpleasant effects, occasionally noted when adrenalin is injected, it seems advisable to use, as Weiss advocates, a combination of adrenal extract and extract of the hypophysis, or the solution of caffeine, referred to above. Neither of these produce unfavorable effects, worthy of consideration, yet act as favorably as any other remedy, recommended for asthma, no matter how it be given.

Ichthalbin in Appendicitis

G. Beldau, of Riga, has had frequent opportunities to study the systematic treatment with ichthalbin, of many cases of appendicitis, usually considered to be in need of surgical interference. The cases in question, were in part characterized by vague, uncertain symptoms, leaving the diagnosis in doubt, while others were straightforward appendix affections with rise in temperature, characteristic tenderness and a palpable mass.

As ichthalbin is insoluble in acid media, it passes through the normal stomach unchanged. In the alkaline intestinal juices however, it is split up into its components, therapeutically inert albumin and nascent ichthyol. The latter is an intestinal antiseptic in the broadest sense of the word. Stubborn diarrheas in children, enteritis in adults as well as intestinal fermentation, no matter from what cause, the author states, are cured by ichthalbin in a comparatively short time. In order to be certain that the preparation is not split up before leaving the stomach, it is advisable to give it in combination with hydrochloric acid.

In acute appendicitis about fifteen grains of ichthalbin is given with six drops of dilute hydrochloric acid in a quarter of a tumberful of water four times a day just before eating. After the acute stage the drug should be continued three times a day for from six to eight weeks or longer if necessary. As inhibition of peristalsis will delay the arrival of the ichthalbin at the site of disease, it is suggested that no opiates be given, provided the patient can bear the pain. In the majority of cases ichthalbin itself acts as an analgesic.

Without denying the advantages of the operative treatment of appendicitis, the author points out the value of Ichthalbin medication, because, as so frequently happens, an operation cannot, for various reasons, be undertaken or the patient will not agree to have it performed. Results that are especially convincing, are obtained in cases of periodically recurring appendicular attacks, with mild subjective symptoms, persisting during the interval. That these interval pains as well as the acute exacerbations fail to occur after the ichthalbin treatment, they can hardly be considered due to mere coincidence. Ichthalbin is, furthermore, a harmless preparation. Even when given in doses much larger than those mentioned above, no undesirable symptoms are produced. In very rare instances only, an idiosyncracy for the drug apparently exists.—Med. Klinik, 1914, No. 15.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Psoriasis in a Very Young Infant.—Haldin Davis reports the case of an infant eight weeks old, in whom the eruption appeared at the age of one month. A very large proportion of its entire body surface is covered with a figured erythema with scarcely any induration, but with a scaly surface. Where the erythema is limited by healthy skin it shows a circinate outline, suggesting the coalescence of circular patches. The face is involved and so also is the scalp, which when the patient was first seen was covered with a thick adherent crust. Most of the surface of the body and limbs is covered, but the extensor aspect is more affected than the flexor, although the exact points of the elbows and knees are not especially attacked. On the buttocks the eruption is complicated by the presence of a certain amount of napkin erythema. The diagnosis in this case lies between psoriasis and syphilis, but the latter is excluded by the following considerations: (1) The baby is perfectly well although it has had no antisyphilitic treatment. (2) There are no other signs suggestive of syphilis. (3) It is the youngest of four children, the ages of the others being respectively eleven, seven and four. All of them are healthy, and the mother has had no miscarriages. (4) The Wassermann reaction, both in the mother and child, is negative. It is interesting to note that there is no history, as far as can be ascertained, of psoriasis in the family. In most other cases of psoriasis in early infancy there has been strong evidence of heredity.—Proceedings of the Royal Society of Medicine.

Overcrowding in Tubercular Families.—The dreadful overcrowding in tubercular families of the submerged tenth is brough out incidentally in an article by M. Fishberg in the "Archives of Pediatrics." He investigated 217 families consisting of 1369 persons of whom 1129 lived at home in 717 rooms and slept in 658 beds.

That is, about two to a bed and 1.57 people to a room including kitchens. Of the 274 tuberculous persons only 112 had separate rooms and only 136 had separate beds. Some consumptive mothers slept on chairs or on the kitchen floor. Fishberg says that this state of affairs is usual in all industrial centers here, and European investigators say it is the same there. No wonder the children are all infected and many a one gets big doses of virulent bacilli before it has had time to develop immunity. Schlossmann is quoted as saying that the mere fact of a child living in a household with an "open" tubercular case, is equivalent to a diagnosis. Country children in non-tubercular families do not become infected for many years—depending upon their chances of encountering bacilli when visiting town or neighbors. The adults in these overcrowded houses are of course in the gravest danger, not of a new infection, but of so deteriorating in health that their old lesions spread. Add to this the undernutrition and the wonder grows that any are left alive. The pity of it all is the fact that sufficient houses or rooms cannot be built for the world's population. The least efficient always have huddled into what shelter they could get and probably always will. The bad conditions can be improved of course, but not eliminated as long as every fool thinks he has a right to create as many babies as he pleases—to be victims of overcrowding, undernutrition and tuberculosis. It is reported that in the Vanderbilt Model Tenement, 77th street and East River, New York City, no new cases of tuberculosis have arisen, thus showing that mere living in a tuberculous family is not harmful if the house is proper and food sufficient. The babies are infected no doubt but are able to resist the spread of the bacilli if properly fed. Unfortunately there is neither money nor room to build model tenements for all, and even if we did, the short-sighted occupants would soon fill them with babies and restore the old overcrowding.—American Medicine.

Inhalation Treatment in Chronic Laryngitis.—There are two methods of inhaling: In the first the medicament is atomized to impalpable vapor by means of sterilized air in a cabinet, while in the second the inhalation is through a sterile mouth-piece or nose-piece.

The medicated steam, a mixture of compound tincture of benzoin, 1:20, is inhaled at a temperature of from 140° to 170° F. for about fifteen minutes. This is followed by inhalations of oily substances without the aid of heat, either of the two following being used:

Camphoræ	ʒj
Olei Picis Liq.	ʒij
Iodi	grn. xx
Creosoti	ʒj
Mentholis	grn. xxx
Olei Sesami	ʒiv

or a 5 per cent. solution of the following:

Iodi	ʒvj
Acidi Oleici	ʒij
Olei Paraffini Liq.	ʒiv
Olei Sesami	q. s. ad Oj

The patient remains indoors for from fifteen to thirty minutes after each treatment. The use of tobacco is prohibited.—E. Mayer.

Why Sodium Citrate Prevents Curdling of Milk in Rennin.—Van Slyke and Bosworth made a series of experiments to determine the reason why sodium citrate tended to prevent the formation of large lumps of tough indigestible curds in the stomach. There has never been any basis of actual investigation to explain the favorable results. The authors from previous work felt that they had found a chemical explanation, and this series of experiments confirmed that opinion. The addition of sodium citrate to normal milk increases the amount of soluble calcium in the milk, this increase resulting from a reaction between the calcium casenate of the milk and sodium citrate, by which is formed sodium casenate and calcium citrate. The curdling of milk by rennin is delayed by the presence of sodium citrate; 0.4 Mg. of sodium citrate per 100 Cc. milk is sufficient to prevent the formation of a curd. The curd produced by rennin in the pesence of small amounts of sodium citrate increases in softness of consistency as the amount of sodium citrate in the milk increases. At the point at which rennin fails to curdle milk, there is in place of the calcium casenate of normal milk, a double salt of calcium-sodium casenate; this double salt, when rennin is added, is changed to a calcium sodium paracasenate which, owing to the presence of sodium, is not curdled. The practice of adding sodium citrate to milk at the rate of 1 to 2 grains of citrate per ounce of milk appears to have a satisfactory chemical basis.—Amer. Jour. of Dis. of Children, April, 1914.

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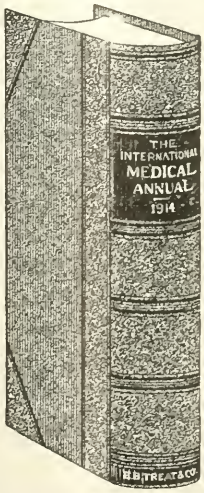

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Miscellany

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OPHTHALMOPHOBIA.—The old bourgeois teaching that any normal man should be able to look frankly into the eyes of his fellows, and that inability to do this act reflects somehow upon the gazer, can hold good only within very narrow limits. We know that many sound subjects resent instinctively the stare of another. It disconcerts, because the one stared at believes, for example, that his clothing is disarranged. In a higher degree, those "fixed" by the eyes of another are visibly perturbed, and perspire, tremble, and even collapse on such occasions. Such subjects, evidently abnormal, also strive to protect their eyes from fixation by glasses, newspapers, etc. In a paper by Seeligmann on "Eye Fear," read recently before the Aerztlicher Verein of Hamburg (*Deutsche medizinische Wochenschrift*, 1914, No. 13) the author gives his opinion that this second degree of eye fear must be due to an evil conscience (as in the case of sexual perverts), accompanied by a high degree of self-consciousness. This coincidence occurs chiefly in those of the highest social status. A third degree of eye fear is bound up with the evil eye and similar superstitions. A literature of vast extent has grown up about this subject.—Med. Record.

WORK OF THE RADIUM INSTITUTE.—A. E. Hayward Pinch reports the results obtained in the treatment of 860 patients with radium or its emanation. The results confirm those detailed in the report of a year ago with regard to the influence of this agent on certain types of malignant disease. The best results are obtained in cases of epithelioma of glabrous surfaces, while epithelioma of the mucous membranes has been found refractory. The effects are very good in uterine cancer, and it is by far the best agent for the treatment of inoperable cancer in this organ. It has proved of considerable value in many cases of carcinoma of the breast, particularly in the treatment of small, isolated recurrences which are attached to the bone. A few cases of carcinoma of the thyroid have been treated with promising results. Paget's disease usually can be cured by a single adequate exposure. Certain cases of cancer of the rectum, particularly the annular form when situated high up, are favorably influenced. All cases of carcinoma of the prostate thus far treated have been benefited, and it is remarkable how rapidly the treatment relieves most of the symptoms. The same may be said of carcinoma of the bladder. Only the hypertrophic nodular form of rodent ulcer yields to radium. Sarcoma, if taken early and treated with very heavy doses, usually gives good results. It has been possible to check the rate of growth of mediastinal tumors in nearly every case, and the action of radium in lessening the tendency to the further production of effusion is striking. While radium promptly reduces the menorrhagia and metrorrhagia of fibroids, it has little or no influence on the size of the tumors. Leukoplakia is usually promptly removed, but has a marked tendency to return. Of nonmalignant conditions certain forms of nævi, lupus, keloid, psoriasis, and lichen with pruritus are all very favorably affected. The results obtained in the treatment of a few cases of exophthalmic goitre are such as to justify a more extended trial. The internal administration of solution of radium emanation in water has a strikingly favorable influence on early cases of arthritis deformans. W. L. S. Alton, of the chemicophysical laboratory, describes his method of preparing tubes filled with measured doses of radium emanation, and designed for a wide variety of sites of application. He finds that these tubes retain their average potency for more than twenty-four hours. He has also devised a method of applying the emanation to the deeper parts by means of a platinoiridium needle into the lumen of which is inserted a capillary glass tube filled with the gas.—Brit. Med. Jour.

THE MENACE OF THE MANICURE.—The manicures should now be regulated in the same way the health authorities had to get after the barbers. At the recent meeting of the New York State Medical Society attention was directed to the numerous cases of felons which have been traced to these women, who as a class have become very reckless in cutting away the natural protective coverings of the nail edges. Pus organisms may be inoculated from the upper layers of the skin even if the instruments are sterile. We cannot see the need of manicures anyhow, but they have become something of a luxurious fad which thousands consider among the necessities of the dainty life. It seems therefore that they must be taught how to keep their instruments sterile and how to avoid injuring the tissues or exposing the lymph spaces where bacteria can flourish. How to accomplish this we do not know, and we must leave it to the Board of Health as we do with all the rest of our sanitary troubles and worries. In the meantime let us trim our own nails, and if we cut ourselves we introduce our own pus organisms to which we have at least some immunity, and do not get those derived from someone else against which we may have no defense whatever. We may expect to hear of some cases of septicemia now that the matter has been brought to public attention.—American Medicine.

THE COST AND SOURCES OF RADIUM—There appears to be a general feeling that the price of radium is being artificially kept up, but evidence that such is the case is difficult to find. At present, radium is mainly derived either from pitchblende mines about Joachimsthal, in Cornwall, and elsewhere, or in lesser amount from some of the rich ores, such as dolomite. The ores for the most part are very low grade, containing quantities up to three per cent. of uranium oxide, and, paradox though it be, it is the high price of radium only that makes an increase of the supply possible.

It is to be recalled that radium is almost universally present, but it no more pays to extract it at a low price than it does to derive gold from sea-water which contains it in appreciable amounts. From time to time information is received of the discovery of fairly rich deposits, but it is the common experience that when an offer is made to take over the entire output from such deposits, none of the radium ever becomes available. Saxony, Russia, North America, and Australia are said to contain sources of radium

and although it would be premature to deny that these exist, there is certainly as yet no evidence of its being produced in such quantities as to affect the markets. As regards radium ores other than pitchblende, a plant has been erected in our country for the extraction of radium from carnotite, an ochre pigment, and there seems good reason to believe that a workable source of radium exists in the double phosphate of uranium and calcium, autunite, that is found in Portugal. The lava from Vesuvius, also, is steadily increasing in richness with every eruption.

There seems to be little doubt that the factor of monopoly enters into the price of radium, and were it possible to substitute for radium, mesothorium or the Röntgen rays in medical work, the price would fall. Another obvious factor is undoubtedly the labor of extraction, which becomes very great when the lower grade ores are used. The estimates as to the quantity of radium available at the present time are mere guesses, but it is generally believed that since its discovery not more than a little over an ounce has ever been put into circulation. The reserves held by manufacturers are not believed to be considerable, but, obviously, on this point there is no information at hand. Though the price of radium has fluctuated since its discovery and is much higher at present than at first, with the careful and thorough search that has been carried out for the sources of supply, it seems reasonable to accept the statement of the dealers that the price is being fixed by the law of supply and demand. It should be remembered that the erection of a plant for dealing with low-grade ore requires a very large financial outlay. This is being provided in various parts of the world and the supply is certainly on the increase, but the conditions of manufacture make it doubtful if the present high price will ever be considerably reduced, as, so far as the lower grade sources are concerned, it is the cost of production rather than monopoly value that is the controlling power.—N. Y. Med. Jour.

Greek in College.—No topic interests a physician more deeply than those matters affecting the education and growth of our young. The physician concerned by necessity with ailments, nevertheless aims toward the normal, and preventive studies are his summum bonum.

Professor West, of Princeton, according to the New York Times, Sunday, April 26, 1914, is endeavoring to marshal statistics to show that students of Greek establish and maintain a preponderating lead. And it is asked if this is because only acute minds choose this language, or because a pursuit of that branch of knowledge endows a mind with more power.

The work of Englishmen as school boys for centuries has been based upon Greek and Latin prosody and geometry, which as being Euclid, is also Greek.

Such students have been, apparently, well eeucated. The contention of pedagogics to-day is to the effect that we may train minds with any systematic material. That science is chosen is largely utilitarian, for Greek verse is not, certainly, a means of livelihood. And yet Englishmen seemed to do something!

May it not be that the formative, the purely formal values of ancient literature exercise an influence which our children require?

The motor principle of education cannot forget the recurrent laryngeal nerve. The comparative anatomy of this nerve illustrates the vital importance of the choice of the vagus as the nerve of animal expression. So that our assimilation of forming and poetic structures is entwined with our bodies' deepest physiology.

If on the other hand it is said that statistics support the notion that only the best men choose Greek, not that Greek study produces our best intellects, still we may ask, why do the best men elect this study?—Med. Fortnightly.

Children in China.—That the Chinese understand how to successfully bring up their children would appear to be evident, seeing the enormous multitude of the population which inhabit the central provinces of China—a population numbering somewhere about 400,000,000, well nigh a quarter of the human race; although, however, the people swarm in number the infantile death-rate is not small. The fact that there are practically no unmarried men or women in China helps to explain the large number of children born, and because polygamy is practised almost all women become mothers even should the female population outnumber the male. Loss of men in war, in dangerous occupations in times of peace, such as in factories, mines, at sea, or on railways, etc., is soon made up in countries where polygamy prevails, but it takes a generation or two in non-polygamous countries to make good the severe losses of men in war, etc.

In China, mothers wellnigh invariably suckle their children, and the period of lactation is often continued for fifteen to twenty months or more. Lactation continued for so long a period would also tend to limit the population were it not for polygamy. In dealing therefore with the numbers of population in polygamous countries these facts must be taken into account.

Infants in China being breast-fed the question of rearing children by other methods would scarcely appear to require consideration. Yet this is not so, for Chinese children from the earliest period of their existence have their natural food supplemented by rice in some form.

Cow's milk is not used as a substitute for mother's milk; for cow's milk is not an article of diet in China. There are few cattle of any kind in China and cow's milk is considered very rationally as fit only for calves, and not for human beings. Buffalo milk is more often met with; it is seldom used, however, as milk, but is made into curd or a kind of cream cheese. Instead of milk, rice in the form of rice water or rice congée (soft boiled rice in which both the the rice water and the softened rice grains are present) is given to children as a supplement to

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their natural food. One may see a Chinese mother feeding her week-old baby with soft boiled ride, or rice which she herself has chewed, and thereby moistened and softened. The effect upon the infant's stomach is very patent to behold, for the distension at times becomes extensive; one would expect the infant's digestion to be upset thereby, and it not infrequently ensues, for "infantile diarrhea" is one of the commonest causes of infant mortality. Rice water is an excellent substitute for milk, but chewed or soft boiled rice is calculated to, and actually does, upset the child. Rice water, that is, the water rice is boiled in (and given after the particles of the rice are removed by straining), is an excellent substitute for milk, and especially in cases in which neither the mother's milk nor cow's milk is tolerated. Rice water does not curdle in the stomach, and is therefore free from the evil consequences of milk clotting in a stomach which is irritated from any cause. European children in the Tropics when the gastro-intestinal tract is irritated or inflamed, and infantile diarrhea is present, do well on rice water as a temporary substitute for cow's milk.

A common cause of intestinal ailments in children in China, especially South China—that is, the districts south of Yang-tse river—is the presence of round worms. Children, whether Chinese or European, as young as seven months old, may have round worms in plenty, and consequent intestinal flux, with at times mucus and blood alternating with obstinate constipation, is a common cause of death in quite young children.

Trismus nascentium or neonatorum—the lock-jaw of newly-born infants, which so long remained a mystery as to its cause, has proved a scourge in many parts. The infection is by way of the umbilical cord; the soiled string and cloth with which the navel is tied and dressed, or the nurse's hands and clothing, convey the infection, and the disease showing itself on the fourth to sixth day causes a fatal issue by the tenth or twelfth day. Nor do European children escape; the writer was witness of a European child nursed by a European monthly nurse dying, on the tenth day, of trismus; the nurse came from a local convent where trismus was endemic, and conveyed the infection to the European infant.

One great conservative factor in infant life in China is the fact that the mother carries her child on her back; the child is thereby prevented becoming chilled, and an equable temperature by contact with the mother's body is constantly maintained. In Britain the mother or nurse used to carry the child on the arm with a shawl wrapped round her body and the child; an equable temperature being thus kept up. The child was thereby prevented being overheated as happens to-day when a hot water bottle is put into perambulators in cold weather, to be followed by a state of cold and chill when the hot water cools. The perambulator has proved a source of illness in many ways in this country, and its most recent pattern, a chair on wheels without protection from wet or cold, is the most detrimental carriage conceivable. The Chinese, in common with all Oriental peoples, have as yet avoided the perambulator, but the modern ways of the West are penetrating the East in every direction; let us hope that this racial destroyer may be shunned and avoided by rejuvenated China.

The "comforter" has not as yet found its way into China, hence we seldom meet with adenoids and the various oral, dental, aural, and thoracic deformities which came in with the use of the comforter, and will remain with us until the comforter is prohibited by law.

The mortality due to the widely reported destruction of female children when these are "not wanted" is a wholly negligible quantity. No race of people cherish children more than the Chinese. Their desire for, and fondness of, children is proverbial, and cruelty to children is unknown. That children are often "found drowned" in habrors and rivers is a fact, but when it is remembered that the boat population of China numbers some ten millions, accidents to children can be readily understood. The boat population actually live on the boats; they have no shore habitation, but the family has its being from generation to generation on the boats. Finding a drowned child now and again therefore cannot be wondered at, and foreigners are apt all too often to ascribe what is an accident to design.

Scarlatina in Southern China is unknown, but not infrequently met with in the North. Measles in the South is quite rare, but is prevalent in the North of China. Diphtheria occurs for the most part in sporadic form, seldom in epidemics. Rheumatic fever in the South of China is practically unknown amongst either Chinese or Europeans.

Small-pox is a great scourge in China, and every Chinese expects to have the disease at some time. The mortality from small-pox is very great, in spite of attempts at inoculation and of vaccination. Except at some of the coast ports where European methods obtain vaccination is extremely limited.

Enteric is probably universal, and it is possible that every Chinese child has an attack rendering it immune in adult years. That the Chinese have recognized this is evident from the fact that they do not drink water unless boiled in the form of tea, and as the Chinese make tea it may be and is taken freely at any time, and even given to children without apparent harm. Tuberculosis in all its forms prevails in China to perhaps a greater extent than in any other country; the introduction of opium smoking was probably due to the presence of pulmonary tuberculosis with its attendant cough, which opium smoking helps to allay.—Jour. Trop. Med. & Hyg.

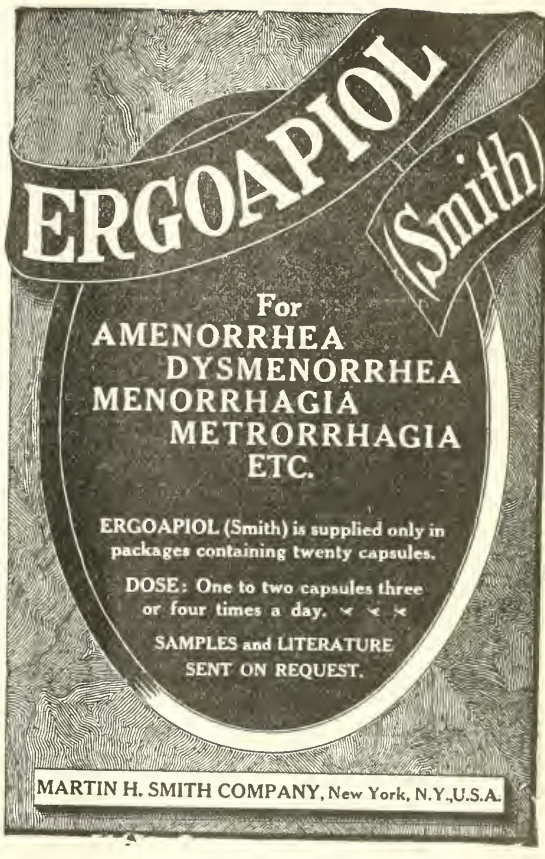
Insanity and Epilepsy in Ancient Times.—Jones notes that insanity was familiar to the Egyptians, whose mentally afflicted were taken to temples, where they were treated by the priests with incantations and sacrifices. Traditional medical knowledge in regard to the insane is said to have been carefully preserved in India. Among the Greeks, Æsclepiades conconsituted an hereditary order of priesthood, who were supposed to exercise curative powers over insanity; and there were Greek laws. made 500 B. C. defining the lunatics who had to be confined. The Romans in their laws guarded the insane as well as their estates. Some of the earliest cases of insanity, as well as of epilepsy, are related at considerable length in Holy Writ; for instance, the insanity of King Nebuchadnezzar, and also his recovery, after which it is recorded he was replaced as King upon the throne of Babylon. The history of King Saul, 1000 B. C., also relates his insanity, and there are several descriptions of epilepsy, the most typical being the only child, who was also a lunatic, for he "suddenly crieth out and foameth at the mouth and gnasheth his teeth," and "oftentimes he falleth into the fire and oft into the water." The ancients not infrequently ascribed epilepsy to the malice of demons, or to the anger of offended deities. If a person was seized with epilepsy in the forum, the

Romans considered it an ill omen, the meeting was dissolved, and all public business was suspended for that day. Hence the disease was called morbus comitialis. Morbus qui sputatur was another of its names, because those present were accustomed to spit upon the epileptic, or into their bosoms, either to express their abomination and loathing or to avert the evil omen.—Practitioner.

Fleas and Plague.—The question of the modes of transmission of plague are of considerable interest in this country owing to the fact that plague is present among the ground squirrels of California. It has been proved by animal experimentation that the disease could be spread from rat to rat by fleas and further that the puncture in the skin made by the flea in the act of feeding affords a wound through which it is possible for plague bacilli to enter, and animals have been infected by the application of infectious material to areas upon which fleas had been allowed to feed. The Commission for the Investigation of Plague in India, in discussing the possible methods by which fleas may transmit plague mentions that it may be "by regurgitation of the stomach contents through the esophagus and pharynx, the bacilli being then injected with the saliva, or on the pricker, or being rubbed into the wounds made by the pricker." The commission, however, found that the infection could be conveyed by smearing recent flea bites with infectious blood or virulent cultures of plague bacilli and considered that the possibility of the transmission of infection among rodents by rats rubbing flea feces into recent flea bites has been demonstrated. Nevertheless, the commission did not feel justified in expressing an opinion as to whether this was the usual method of infection.

The Public Health Reports, May 8, 1914, is an abstract of a report by A. W. Bacot and C. J. Martin, of the Lister Institute, which appeared in the Journal of Hygiene, Plague Supplement III, giving the results of certain experiments carried on regarding the mechanism of transmission of plague by fleas. The authors summarized their work as follows: Under conditions precluding the possibility of infection by dejecta, it was found that two species of rat fleas, *Xenopsylla cheopis* and *Ceratophyllus fasciatus*, fed upon plague blood, can transmit plague during the act of sucking, and that certain individuals suffering from a temporary obstruction at the entrance of the stomach were responsible for most of the infections obtained and possibly for all.

In a proportion of infected fleas the development of the bacilli was found to take place to such an extent as to occlude the alimentary canal at the entrance to the stomach. The culture of pest appears to start in the intercellular recesses of the proventriculus and grows so abundantly as to choke this organ and extend into the esophagus. Fleas in this condition are not prevented from sucking blood as the pump is in the pharynx, but they succeed only in distending an already contaminated esophagus, and on the cessation of the pumping act some of the blood is forced back into the wound. Such fleas are persistent in their endeavors to feed, and this renders them particularly dangerous. Fleas suffering from obstruction do not necessarily perish, and in the course of some days the culture obliterating the lumen of the proventriculus may autolyze and the passage again become pervious. They are, however, incapable for the time being of imbibing fresh fluid, and are, therefore, in danger of drying up if the temperature is high and the degree of saturation of the atmosphere low. Although so



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far as the author's observations go, such fleas withstand desiccation quite as well as normal fleas which are not fed, their length of time must be short, directly hot dry weather sets in, and the investigators are led to wonder whether this fact may not, to some extent, explain why in India epidemic plague is confined to the cooler and moister season, and particularly why in Northern and Central India the epidemics are abruptly terminated on the onset of the hot dry weather. It appears then that while fleas may be instrumental in spreading plague among certain rodents there has been no direct proof that they have been the means of infecting members of the human species. Yet it seems as if this were probably the case.—Med. Record.

THE HYPOTHESIS OF THE SELF-LIMITATION OF POLIOMYELITIS.—Epidemic poliomyelitis does not attack all who are exposed to it, but appears to select its victims, leaving others quite unharmed. In some cases the attack is so mild as to be recognized with difficulty. What can be the reason of this apparent variation in susceptibility? Kling and Levaditi have made some observations that are of much interest and significance with respect to this question. The serum of patients who are in the midst of an attack or who have passed through an attack destroys or neutralizes the poliomyelitis virus. This is demonstrated by injecting monkeys with suitable mixtures of virus and serum. Tests of this kind with the serum of young persons who appeared to be refractory to poliomyelitis because they remained perfectly well while living in the midst of a heavily infected district gave, in two out of nine experiments, complete protection, in five partial protection and in two none at all.

How are such results to be explained? One may suppose that the antibodies on which the resistance would seem to depend are the expression of a natural, inborn immunity or the result of what may be called a latent infection which does not develop to such an extent that recognizable symptoms are produced—in other words, the result of an acquired immunity due to a spontaneous protective vaccination or inoculation. The virus invading the upper respiratory passages multiplies sufficiently to produce a distinct antigenic effect, but no other appreciable reactions. Kling and Levaditi are inclined to favor the latter hypothesis, at least provisionally. In order to test the correctness of this hypothesis further, it would be necessary to repeat the experiments on the protective action of serum with the serum of individuals that have not been exposed to the virus.

If it should be found that the serum of such individuals is quite devoid of protective action, the hypothesis in question would be strengthened very materially. If, on the other hand, such serum were found to be protective also we would have to conclude that a natural inborn immunity to poliomyelitis does exist in certain individuals. In case the former hypothesis of a latent, clinically harmless infection should be confirmed, then the idea already advanced that the virus of poliomyelitis is much more profusely disseminated than indicated by the occurrence of actual instances of the disease would be securely fortified. If so disastrous a disease as poliomyelitis limits its spread spontaneously by the creation of an active immunity in the manner hypothesized by Kling and Levaditi, it is indeed fortunate.—Jour. A. M. A.

FILLING AND EMPTYING OF THE HEART IN WORK AND REST.—G. F. Nicolai and N. Zuntz have constructed a treadmill and X-ray apparatus so arranged as to permit of the photography of the heart at different stages before, during, and after work. It may be accepted as certain that all changes in the size of the heart which take place suddenly must rest upon alterations in the blood content of its cavities. In the normal condition of rest or ordinary activity the heart never completely empties itself. During work the size of the heart is slightly increased owing to an increase in the amount of blood contained in its cavities. This enlargement occurs very promptly after the beginning of exercise and is most probably due to the action of the skeletal muscles and an increased aspiratory action of the deepened and accelerated respiratory movements. Such an increase in the size of the heart is not an indication of any insufficiency, for it constantly occurs in perfectly normal individuals. Within a few seconds after the cessation of work the heart decreases in size to a point below its normal during rest. This is the result of a more complete emptying of the ventricles after exercise than occurs under average conditions. The action of the heart can neither be so accelerated during work, nor so slowed after it, that the heart will maintain its normal size. Although the actual changes in the measurements of the shadows of the heart under the conditions of the studies were relatively slight, if the changes in the heart volume are calculated from these they will be seen to be quite large. Thus, the diastolic content before work was found in one case to be 280 Cc., during work it rose to 310 Cc., and after work it fell to 220 Cc.—Berl. klin. Woch., May 4, 1914.

THE REPORT OF COL. GORGAS ON THE SANITATION IN SOUTH AFRICA.—At the invitation of the Chamber of Mines of the Transvaal, Surgeon-General W. C. Gorgas of the U. S. Army visited South Africa and investigated the mortality among the natives. The special point was to see what could be done to check the excessive mortality from pneumonia. His findings and recommendations are published in the Journal A. M. A., June 13, 1914. The pneumonia death-rate varies greatly in the different mines and also according to the locality from which the operatives come. It is highest among the natives from the British Nyassa Land Protectorate and lowest among the Cape negroes. Gorgas compares the conditions with those existing among the negro laborers in Panama. In general, a community that has a large proportion of tropical natives will have a high pneumonia death-rate as compared with that among the non-tropical natives. There are, of course, individual exceptions as is always the case in infectious diseases. It is a general remark that the old "boy" in the mines has a much lower death-rate from pneumonia than the new "boy," and there is no doubt but that this is true. In the beginning Panama experienced much the same trouble among the West Indian negroes who were employed there. An investigation by an appointed board demonstrated that it was largely a question of immunity and that longer residence and longer exposure reduced the pneumonia death-rate very materially. The housing of a large number in barracks was another factor and the scattering of the laborers in their own houses also caused a marked decrease of the mortality. Immunity is the next important cause and the same conditions will have a similar effect in the Transvaal. Dr. Gorgas also recommends the inoculation experiment against pneumonia, the prevention of pneumonia infection by carriers, drinking-

cups, etc. Other diseases, tuberculosis, miners' phthisis, cerebrospinal meningitis and typhoid fever are also noticed. All of these have more or less serious mortality. The usual methods that have been found effective against tuberculosis can also be combined with those recommended for pneumonia. Miner's phthisis can be largely prevented by water spraying in the mines, meningitis by prevention of contact infection, crowding, etc., and typhoid by vaccination. As on the Isthmus the scattering of the employees into separate houses with their families is the first important measure recommended against pneumonia, and Gorgas finds conditions approximately the same as those encountered on the Isthmus. If this is not possible, at least fifty feet of floor-space per man should be provided in barracks and huts. The diet of the Rand laborers is very largely of corn-meal, thus giving a too large proportion of carbohydrates, and the reduction of this element and the increase of meat is recommended. Bolted corn-meal is also advised against, but the matter should be further investigated. The plan, as used in the Kimberly mines, of allowing the laborer to buy his own food has worked well there and in Panama. Questions of sewerage and water-supply and of alcoholics are also discussed. In Panama they started with high license but found it necessary to adopt prohibition. Of course, the employees could get their liquor in the cities of Colon and Panama, but prohibition in the Canal Zone has had a very good effect, and it was found that a very large portion of drinkers did not care to make the extra effort required to obtain the liquor. After the housing improvement, Gorgas recommends improvement in the hospital conditions and care of the native sick, and, third in importance, the establishment of a central sanitary bureau or department under the direction of the Chamber of Mines, the head of this department to represent the mines on all sanitary questions. "The present regulations regarding matters of sanitation of the mines should be revised so that the sanitation of the mines might be accomplished by the authority of one official, government or municipal, instead of with five different interested parties, as is now the case."

The History of Spectacles.—Some time ago Greeff, of Berlin, described the earliest known pair of spectacles, those belonging to Willibald Pirkheimer in the Wartburg; more recently the same author has described a still earlier pair, probably made before the year 1500, which were brought to his attention by Sudhoff of Leipsic. These were found in an old volume of incunabula by the well-known antiquarian bookseller, Jacques Rosenthal, and were presented by him to the Germanic National Museum at Nuremberg, where they are now to be seen in the sections devoted to costumes and personal ornaments. The frame is of tanned blackened leather, of obvious Nuremberg make, like the Pirkheimer spectacles, of the old traditional "nose-rider" shape, but they are clumsier and thicker than the Pirkheimer pattern of 1520-1530. The lenses are lacking. In view of these characteristics and of the fact that they were found in an old fifteenth-century folio, Greeff and Sudhoff seem to have no doubt that they were made before 1500.

Greeff also traces the evolution of the true modern spectacles from the old nose-riders (the originals of the pince-nez), and describes the binocles or *Scheerenbrillen* which came into fashion in 1796, consisting of two lenses mounted on a scissor-shaped handle, the originals of the modern lorgnette. The earliest form of the true spectacle glasses was invented and introduced by Monsieur Thomin, *marchand miroitier lunettier* of Paris, and were essentially "temple spectacles" (*lunettes à tempes*), the shanks extending no further than the temples. There were two kinds, one with a small endplatelet, which was represented in a portrait by Pelham, an English painter of the eighteenth century, of which a copper plate was made by J. Clark; the other, which is to be seen in Graff's portrait of Chodowiecki (1795), with a characteristic large circular fastener at the end of the shank, which held the spectacles against the temple. The next stage was that of the "ear spectacles," which at first had crude, heavy, clumsy shanks, jointed at the end, like those in the Beethoven house at Bonn, which were further improved by slitting the ends or by means of an olive-shaped fastener. The next improvement, consisting of a jointed appendage to the shank which passed underneath the occiput, was made in 1752 by the London optician, J. Ayscough. A later variant of this joint passed downward and backward underneath the ear. Still another variety of this joint was so arranged that it could be bent suboccipitally, as in the first instance, but otherwise bent back *in extenso* when the glasses were not in use. These were called extension-spectacles (*Ausziehbrillen*). Up to the beginning of the eighteenth century the lenses were still very large and round; but after that time they began to be octagonal, square, rectangular and finally oval. About the same time the bridge began to change in shape, first assuming the form of a K placed sidewise.

The origin of the present fashion of large circular lenses set in delicate tortoise-shell mounts is a pastel portrait of the painter Chardin in the Louvre, executed by himself in 1760, the spectacles in which were copied with great success by recent French opticians and are known in Paris as Chardin spectacles. The same type is familiar to us in the well-known portrait of Benjamin Franklin. Four or five years ago, says Greeff, a young woman or lady of fashion would have been horrified at the notion of wearing spectacles of such an unsightly type. To-day she would regard it as not only chic, but the height of elegance. Plenty of people in America are inclined, no doubt, to revive the traditions of "Old Ben Franklin's days" for similar reasons, although the optical advantages and the comfort of these large lenses are obvious. —Jour. A. M. A.

Goldsmith the Physician.—The proposed plan to place a statue of Oliver Goldsmith in some appropriate place in London, meets with widespread approval. And in paying this late honor to a great man, English-speaking physicians will recall with deep sympathy the trials and tribulations he knew as a medical practitioner in London before his final success in literature was achieved. Goldsmith reached London in February, 1756, says an editorial writer in the London Lancet, March 7, 1914, after a somewhat mythical tour in France and Italy. He was then in a state of utter destitution, and with difficulty, we must suppose, managed to become a chemist's assistant on Fish-street Hill, near the Monument. Later on, through the kind help of a Dr. Sleigh, he set up as a physician upon the opposite side of the river. Here he told a friend that he "was doing very well," but he was in a tarnished dress and a shirt a fortnight old. Reynolds once told an anecdote of the care with which Goldsmith at this time carried his hat so as to hide a patch in his coat. He tried all kinds of other employments, from that of usher to that of printer's

reader, but returned as a *pis aller* to the medical profession, for which he had so little gift and for which he was at this time not "qualified" as the word is now understood. In December, 1757, he writes to his brother-in-law Hodson that he was making shift to live by a "very little practice as a physician, and a very little reputation as a poet." In August, 1758, he wrote three letters to friends in Ireland, begging them to get him subscribers for his forthcoming book, "On the Present State of Taste and Literature in Europe." The MS. of one of these letters was reproduced in 1858 by the modern representative of Griffin, Goldsmith's original publisher. It probably has often been torn from the collected editions of Goldsmith printed by Griffin in 1858, and has deceived the unwary collector of autographs. In this letter, which is addressed at great length to Mrs. Lawler, *née* Contarine, the cousin with whom poor "Goldie" had been in love in Ireland, he gives an account of his penury, none the less poignant for its tone of persiflage. He intends, he says, to adorn his room with "maxims of frugality." "These," he continues, "will make pretty furniture enough and won't be a bit too expensive, for I shall draw them all out with my own hands, and my landlady's daughter shall frame them with the parings of my black waistcoat. Each maxim is to be inscribed on a sheet of clean paper and wrote with my best pen, of which the following will serve as a specimen: 'Look sharp. Mind the mean (*sic*) chance. Money is money now. If you have a thousand pound, you can put your hands by your sides and say you are worth a thousand pounds every day of the year. Take a farthing from an hundred pound, and it will be an hundred pound no longer.' Thus which way soever I turn my eyes they are sure to meet one of those friendly monitors, and as we are told of an actor who hung his room round with looking-glasses to correct the defects of his person, my apartment shall be furnished in a peculiar manner to correct the errors of my mind." The sale of his book was to pay for his passage to Coromandel, where, through his friend Milner, he had obtained the position of physician and surgeon to a factory. His practice was to bring him in £1,000 per annum, but evidently he was expected to qualify first. He must have been familiar with Smollet's description of an examination at Surgeons' Hall in "Roderick Random," but undeterred by this he presented himself before the examiners and was disqualified. The examiners were probably Messrs. Mark Hawkins, Fullagar, Nourse, Girle, Singleton and Roul. The entry in the Royal College of Surgeons "Examination Book" under date December 21, 1758, states that before a Court of Examiners, held at the theatre, James Johnson was "appointed apprentice to Mr. Carson, Thomas Meggs qualified for suregon to a regiment, James Bernard Mate to an hospital, Oliver Goldsmith, found not qualifyd for Do." At the same court four naval surgeons were also appointed. The poet, we now know, afterwards obtained the M.B. of Dublin (probably before 1761), and of Oxford in 1769. His medical career in London, however, seems to have ended with his failure at the Royal College of Surgeons of England. He became famous in literature, even at a time when he was playing the flute to the ragged children at the foot of Breakneck Steps leading to his lodgings in Green Arbour Court. Sixty-eight pages are now devoted to his works in the British Museum Catalogue.—American Medicine.

THE FLANNEL BINDER AS A PROPHYLACTIC AT VERA CRUZ.—The report that dysentery and malaria have developed among the troops and sailors at Vera Cruz, notwithstanding the efforts at prophylaxis of the able medical corps with which both the army and navy are provided, will doubtless prove less serious than now appears. The rapidity with which the patients can be transported to non-tropical countries and the effective remedies available will also serve to arrest most cases. It is to be hoped, however, that the Government will soon realize that President Wilson's ideals concerning Mexican affairs may mean a great sacrifice of American lives if our officers and men are exposed to the torrid heat which overwhelms Vera Cruz during July, August, and September.

Pending so fortunate an issue as the prompt return of our fleet and army, prophylactic measures are in order. Among those which may be mentioned is one which, though seldom if at all mentioned in English or American literature, has nevertheless been found of great value by French army surgeons in tropical countries for the prevention of inflammatory intestinal disorders, diarrhea and bacillary dysentery in particular. This consists in the constant use of a flannel binder around the abdomen. Though it is somewhat annoying at first the men soon get used to it.

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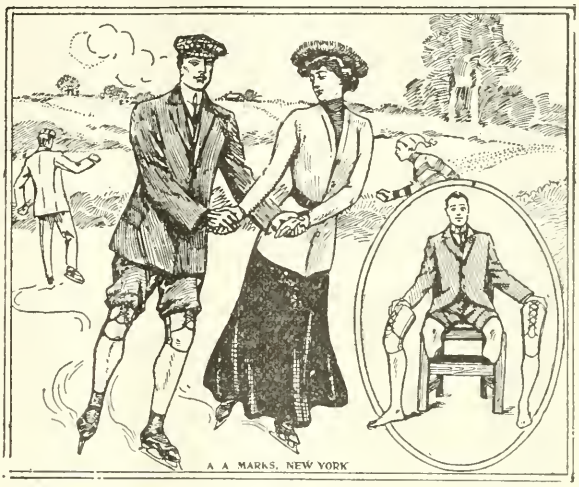

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seat of a pronounced hyperemia. The flannel bandage, therefore, by promoting and sustaining a corresponding condition in the abdominal viscera raises their bactericidal and antitoxic activity considerably above normal limits and thus prevents the development of pathogenic organisms to which various intestinal disorders are due.—N. Y. Med. Jour.

Enormous Sale of Red Cross Seals.—More than 44,000,000 Red Cross Christmas Seals were sold last December, according to a report issued by The National Association for the Study and Prevention of Tuberculosis, and the American Red Cross. In this way $440,000 is netted for anti-tuberculosis work in various parts of the United States.

The sale in 1913 is a gain of 4,000,000 seals over 1912, or 10 per cent. It is hoped that this year the 50,000,000 mark will be reached. The seal design for 1914 has been selected and orders for the printing of 100,000,000 seals have been placed. Plans for the organization of a larger sale this year than ever before have been perfected.

New York State led the country last year with a sale of over 10,500,000 seals, or one for each man, woman and child in the state. Of this number, more than 6,825,000 were sold outside of New York City by the State Charities Aid Association. Pennsylvania's sale was second largest, aggregating 3,125,000 seals. Ohio came next with a sale of 2,800,000, Wisconsin fourth with 2,700,000, and Illinois fifth with 2,500,000. Hawaii sold the most seals per capita, the total sale being somewhat over two for each inhabitant. Rhode Island came second with a sale of two per person.

Beginning with a sale of 13,500,000 in 1908, in six seasons the revenue which these little holiday seals have brought to the anti-tuberculosis campaign has more than tripled, an aggregate for the period of over $1,800,00 or 180,000,000 seals.

Abderhalden Test in Mental Disease.—Charles E. Simon, of Baltimore takes up the claims of Fauser as to the findings of the Abderhalden test in certain types of insanity with special reference dementia praecox. He reviews the literature which followed Fauser's publication and says that in surveying it one cannot help but being impressed, on the one hand by the wonderful uniformity of the results reported by Fauser and the wide divergence from those of certain other authors, like Hauptmann and Bumke. He thinks that there is good ground to suspect that Fauser was too enthusiastic in his views and also that his opponents may have lacked complete control of the technic. Fauser himself states that he obtained a reaction with sex gland repeatedly in cases in which it was unexpected and that the diagnosis between maniac depressive insanity and dementia praecox could not always be made with certainty. Simon relates his own experience with the use of the test in 106 cases and says "to summarize the results" that a sex gland reaction may be obtained in nearly if not all cases of dementia praecox at some stage or another but that this action is not specific as Fauser asserts. He finds that the reaction may also be obtained in other forms of insanity and he does not attempt to explain them. He must therefore conc ude that Fauser's rule has exceptions or that the positive findings in maniac-depressive insanity or paresis are due to errors of diagnosis or technic. The fact, however, remains that in dementia praecox the positive reaction is the rule while in the purely functional psychoses it is the exception. Simon, there-

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fore, discusses at length the technic employed and which he thinks meets fairly any criticism from the technical point of view as far as our knowledge goes at present. He believes, however, that advances can still be made and while we cannot, as yet, draw positive conclusions regarding the significance of the reaction in dementia praecox, certain possibilities suggest themselves. One of these is that of a perverted function of the cells concerned in the production of the internal secretion of the sex glands in dementia. "Considering the problem from the clinical side, the all-important question of course suggests itself whether or not the reaction has any relation to the pathogenesis of dementia praecox. Theoretically, this is of course perfectly possible. Granted that anti-sexgland ferments do occur in the circulation in dementia praecox, and that their presence were the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then we may also assume that digestion of these cells or cell-products will take place, and that all conditions would thus be given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then we might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs, might similarly be expected to have a beneficial influence. Evidently, the problem is now open to investigation from many sides, and it does not seem unreasonable to expect that definite advances will be achieved in the near future."—Jour. A. M. A.

LARGE FEES.—Millionaires are not always particularly liberal in rewarding the ministrations of their doctors. The business instinct which enables them to acquire vast wealth makes them always suspicious that their money may make them the prey of designing persons. This reproach cannot be brought against the executors of the late Mr. Pierpont Morgan, who, it is said, have paid very large fees in money to each of the three physicians in attendance and to the nurses. Other rich men have adopted unusual ways of fecing their doctors. It is related of Dupuytren that he was consulted several times by the head of the Paris house of Rothschild in his day. No fee was tendered at any of the visits, but a considerable time afterwards the surgeon was presented with a handsome sum, the proceeds of a Bourse transaction in which the financier had interested him without his knowledge. A Mr. Steer took the same way of expressing his indebtedness to Sir Astley Cooper, who had attended him as a friend. Hs sent the famous surgeon a draft, stating that it was the profit "on £2,000 of the ensuing loan, which I had an

opportunity, out of a very small sum Sir F. Baring has given me, of appropriating for your chance." A Mincing Lane merchant for years paid Cooper £600 a year for attendance. One of his largest fees was that given him by a West Indian merchant, Mr. Hyatt, who, after being operated on for stone, took off his nightcap and threw it at Cooper, saying: "There, young man, put that into your pocket." The cap contained a cheque for a thousand guineas. Sovereigns have sometimes considered that the honor of attending their august persons was a sufficient reward for their doctors, but there are many instances of princely generosity. Abu Nasr, who was believed to have saved the Caliph Nasr from the necessity of being cut for stone, is said to have received a fee equivalent in money value to £12,000, besides rich presents. Gabriel Bachtishua was paid by the Caliph, whose physician in ordinary he was, at the rate of £1,000 a month, and received a present of £1,250, besides robes of honor, every New Year's Day. On one occasion he is said to have received £25,000 as a single fee. Dimsdale, who went to Russia in 1768 to inoculate the Empress Catherine and her son, received a fee of £12,000, with a pension of £500 a year and the title of Baron, which is still borne by a descendant. In 1792 Dr. Willis (who had charge of George III in his periods of derangement) was called to Lisbon to undertake the treatment of the Queen of Portugal, who was suffering from mental disease, on the following terms: £1,000 a month as salary, the expenses of his journey, a table for himself and suite; and £20,000 if he succeeded in curing his illustrious patient. Willis was received at Lisbon with honors such as are usually reserved for royalty. Sir Morell Mackenzie received £13,000 for three months' attendance on the Emperor Frederick. But the largest fees paid by a monarch in modern times were those distributed among his medical attendants by Louis XIV after the famous operation for fistula. Like the public benefactor of whom it is recorded that

He out of his great bounty,
Built this bridge at the expense of the county,

the Rei Soleil was liberal at the expense of his people. It is estimated that the *grande opération*, as it is known in French history, cost the nation some £40,000. Félix de Tassy, the operator, received 300,000 livres in addition to a landed estate. The surgeon was a favorite with the King, who two years before had given him 100,000 livres, and who four years later gave him a patent of nobility. The physicians present at the operation were also richly rewarded. D'Aquin received 100,000, Fagon 80,000, and Bessiéres 40,000 livres. Each of the four apothecaries received 12,000 livres. The apothecaries doubtless did something for their money, but the physicians were merely onlookers, and it must have been gall and wormwood to these haughty pedants to be compelled to leave the treatment of their royal master in the hands of one whom they despised as a mere handycraftsman.—Brit. Med. Jour.

The Constant Need for an Effective Tonic.—It is a fact not generally recognized, but very true nevertheless, that the class of remedies most frequently used by the practitioner is that made up of the tonics or reconstructives. This is not so surprising, however, when we stop to consider that the great bulk of ailments which lead people to consult their physician, have their origin in some depression, derangement or "falling off" in bodily vitality. Naturally, in instituting treatment for such afflictions, the practitioner seeks to stimulate faltering functions, increase the activity of weakened organs and restore all the energy he can to the whole organism. To do all this and produce permanent, not temporary, results, requires a remedy that possesses beyond all question tonic and reconstructive properties. Among those that have been found especially capable of upbuilding the body and accomplishing changes permanent in character, Gray's glycerine tonic compound has long stood first. The reason for this popularity is found at once in the remarkable efficiency of this product, for when properly administered it is a dependable means of effecting prompt and substanial results in atonic indigestion, gastro-intestinal catarrh, chronic bronchitis, incipient tuberculosis, neurasthenia, nervous disorders in general, and wherever an efficient restorative and reconstructive is needed. For over sixteen years "Gray's" has been at the command of the profession, and countless physicians derive genuine satisfaction from its use because they have found it one of the few remedies that measures up to all that the word tonic means in modern therapeutics.—Purdue Frederick Co.

Paraffin Cancer.—"Chronic irritation by coal oil products is considered by B. F. Davis, Chicago, in the Journal A. M. A., May 30, 1914. Irritation from coal oil products was first discussed by Volkmann in 1875, who described an acute and a chronic form. The final stage is thus described by him: "As a result of individual predisposition and particularly deficient cleanliness, the process, which previously has been a hyperplastic epidermic growth and sebaceous secretion, now develops into multiple, warty or papillary formations, some of which degenerate into cancer." In some cases the sebaceous crusts described above exhibit almost a horn-like consistency. The chief seat of these hyperplasias are the exposed forearms and the scrotum. In an old workman Volkmann counted fifteen such warty growths with thick crusts on the dark-brown spotted and fissured forearm, and three on the scrotum. This picture of warty growths completely suggests the "verruca cancerosa" of the aged. Schamburg tabulated reported cases up to 1910 and remarked on the tendency to undergo spontaneous involution. Many of the lesions ulcerate and destroy themselves. The source of the tar seems to have an influence. In Great Britain gas works tar causes dermatitis while blast furnace tar does not. One explanation is that gas works tar contains substances capable of producing cell division *in vitro* while blast furnace tar does not. The irritating substances seem to be present in crude paraffin as bodies having possibly an amidin nucleus and associated particularly with the compounds of the anthracene group. The greater portion of them are probably separated from the oil in the pressed distillate process. Davis reports a case from Dr. Bevan's clinic and describes the conditions found by him in an oil company's plant where the crude paraffin is run into great presses and the oils, pressed distillate, extracted. The paraffin remaining in the press and presumably containing the irritating substances is scraped off by the men, who have their arms smeared with the substance. During the first few months, the majority suffer from "wax boils" on the arms and neck and in some cases it develops into true epithelioma, as in the case reported. Closely allied to this form of cancer is the so-called tobacco cancer, the cancer of anilin dye workers, of chimney-sweeps and kangri burns of the natives of Cashmere caused by the little portable heaters that they carry

under their clothing. Irritation by heating cannot, however, be considered as the cause of most of the other forms and none other than a chemical cause seems possible, in the tumors of anilin workers and the betal-nut workers. Davis concludes that it seems justifiable to assume that the paraffin cancer is from chemical irritation and the other forms may also have the same cause.

The Best Time for Work.—This is a question that is receiving considerable attention in Germany, and the curious conclusion is reached that fatigue gives the emotions and imagination full play so that novelists do better at night when not hampered by the repressions of their intellect! Perhaps this explains some silly novels. It is agreed that we can commit to memory, or do mathematics best in the early morning and that a fatigued brain cannot remember. It has again been proved that night work of school children is not only useless but an actual harm from the exhaustive stimulation necessary to make the brain work at all. Evening is story time, for then our thoughts run riot, and tired children love the marvellous, though they see the inconsistencies when they are fresh in the morning. It is true that there are few philosophers at the breakfast table nowadays, but that is because few get enough sleep and are semi-somnolent for an hour or two. It is also true that dinner conversation is the most brilliant, but that is because our inhibitions are weak. It does not seem even good the next day when we soberly go over what we can remember. So we cannot understand why anyone can advocate working in the period of fatigue. Some men work well late at night but they sleep late at day, and they would do better if fresh. Many a writer tears up what he writes at night, for he sees its worthlessness in the morning. It can be accepted as an axiom, that for all kinds of work, either muscular or mental, the most and best can be done after a good night's sleep, and that the product deteriorates until fatigue makes it worthless in four or five hours. After a rest, it again mounts in quality and quantity, but deteriorates more quickly than in the morning. Night is the time for mental and physical rest, if the day is occupied.—American Medicine.

The Source in the Fluids in Syphilis of the Substances which Give the Wassermann Reaction.—The source and the nature of the substances in the blood and other fluids of syphilitics on which the Wassermann reaction depends are not determined. At first they were regarded as true antibodies, but when it became known that specific antigen (extract of congenitally luetic liver) is not essential in order to obtain the reaction, and that the *Spirochaeta pallida* cannot be used successfully as antigen in the reaction, there no longer was any good reason for regarding the reacting substances in syphilitic fluids of necessity being antibodies.

To obtain some clue as to the source of these substances, Wassermann and Lange have made some very interesting experiments with the cerebrospinal fluid of syphilitics. They selected this fluid for their work because it is much less complex in its composition than the blood-serum and consequently less liable to undergo physicochemical changes that may give rise to misleading results. Thus the action of cerebrospinal fluid which gives the Wassermann reaction remains constant for a much longer time than in the case of serum. Wassermann and Lange find by accurate quantitative determinations that one source at least of the reacting substances is the lymphocytes in the fluid. It will be recalled that when the cerebrospinal fluid gives the Wassermann reaction it invariably contains an increased number of these cells, and it was found that autolysis of the lymphocytes in positive cerebrospinal fluid from syphilitics in most cases would result in an increase, sometimes very marked, in the power of the fluid to fix complement in the presence of extracts of syphilitic liver. This increase could not be obtained by autolysis of the cells in other cellular cerebrospinal fluids (those from non-syphilitic meningitis, alcoholic dementia) than those from syphilitics; hence it would seem that the lymphocyte, which is a prominent element in all syphilitic lesions, constitutes a laboratory for the manufacture of the substances necessary for the Wassermann reaction.

Whether these substances are antibodies still remains an open question concerning which Wassermann and Lange indicate that they may have something to say before long.—Jour. A. M. A.

Julius Bettinger ("L'Anonyme Du Palatinat.").—For half a century or more the identity of the physician who, under the above title, contributed so much to the knowledge of the experimental inoculation of syphilis remained a complete mystery. It was in 1855 that the experiments were reported to the Medical Society of the Palatinat according to a recent article in *La Chronique Médical.* The experiments proved irrefutably the contagious properties of specific blood, as well as secondary specific lesions. This was at the time that Ricord held diametrically opposite views on this subject. It was, according to this article, Hoffmann's researches into the question of the infectivity of specific blood and his study of the older literature pertaining to this question which led him to the discovery of the author of these experiments heretofore shrouded in mystery. In the *Aertzlicher Intelligenz-Blatt* for 1856, the article goes on to say, he found the report of the proceedings of the Society of the Palatinat pertaining to this work. ("Rapport Médical pour le Palatinat rédigé d'après les Rapports Médicaux de Cantons.") The identity of the author was made certain by a communication from the son of Bettinger to Hoffmann.

Bettinger was born in 1802 at Zweibsucken, and studied medicine at Wurzbourg; at twenty-two years of age he was named assistant at the Cantonal Hospital at Frankenthal in the Palatinat. It was here that in later years his communication regarding the inoculability of specific blood and secondary lesions was made. In 1836 he was created director of the Cantonal Hospital; in 1856, one year after the anonymous communication had appeared, he received the Cross of the Order of St. Michael, without there being any apparent explanation of this honor. In 1878, his fiftieth anniversary of service in the Palatinat was celebrated, and he was the recipient of many tokens of respect and esteem for his life-long service and high attainments. He resigned in 1885 and died in 1887, having preserved his pristine vigor and strength of mind and body till nearly the end, also having kept the authorship of his chief work secret. It is of exceeding interest that Hoffmann, one of the discoverers of the cause of syphilis, should be the observer to throw light on the long puzzling question of the identity of "l'Anonyme du Palatinat."—Boston Med. & Surg. Jour.

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ACUTE RHEUMATIC ARTHRITIS IN CHILDREN

By W. C. Wolverton, M.D., of Badger, Iowa

ACUTE rheumatism occurs during childhood with much greater frequency than is generally supposed; and it is to emphasize this fact particularly that the writing of this paper is undertaken. The symptoms are often so vague that the true nature of the malady is easily overlooked, with particularly deplorable results in the way of a hopelessly crippled heart.

Acute rheumatic arthritis in childhood often varies widely in its manifestations from those commonly noted in the case of adults. The child may complain of pain in or about one or more joints, on motion, when there are none of the other symptoms, as redness, swelling of the affected joints, fever, etc., present. These vague pains are all too often dismissed as "growing pains," which term, like "rheumatism" itself, covers a multitude of careless diagnoses. There are three conditions which are particularly apt to give rise to what the parents term "growing pains," in which obsolete nomenclature many a doctor is too apt to concur; these conditions are tuberculosis of the hip-joint, acute osteomyelitis, and acute rheumatic arthritis. An incorrect diagnosis in any of these three conditions is quite certain to result disastrously; in the two first named, by allowing extensive destruction of bone, with permanent crippling of the child; and in the case of an unrecognized acute rheumatism, there is very apt to occur, as a sequela, a valvular lesion which will occasion great surprise and chagrin when discovered later on. Let us, then, be thorough in our examinations of *all* patients, but especially so in the case of these little ones, who are unable to give us a clear description of the nature and location of their aches and pains.

On the other hand, given a creeping infant with a painful, inflamed knee-joint, do not dismiss this as a case of "rheumatism" until you have made a thorough search for the presence of a piece of a broken needle, a pin, sliver, or other foreign body, picked up by the baby in its travels over the floor.

Again, do not make the mistake of calling an acute suppurative osteomyelitis "rheumatism"; the former condition is a fairly rare one, but that is all the greater reason why we should ever be on the lookout for it. The writer made this very mistake, something more than a year ago; an acute osteomyelitis of the lower end of the tibia was called acute rheumatic arthritis of the ankle joint; and considerable bony tissue was destroyed before the true nature of the disease became apparent.

Do not make a diagnosis of acute rheumatic arthritis of the knee-joint until you are sure you can rule out tuberculosis of the hip-joint, remembering that branches of the obturator, anterior crural and sciatic nerves supply both the hip and knee-joints; and that disease of the hip-joint consequently may, and frequently does give rise to pain referred to the knee-joint.

The fact that acute rheumatic arthritis usually affects two or more joints simultaneously, or in rapid sequence, should be helpful in making the diagnosis; but the disease may rarely occur as a monarthritis, especially if proper treatment is begun promptly, before more than one joint has been attacked.

Infantile scurvy must at times be differentiated from acute polyarthritis; but examination of the gums and urine, and localization of the pain and swelling to the epi-

physeal regions of the long bones, will make the difference clear.

Ibrahim, of Heidelberg, remarks that the milder and shorter course of the joint manifestations of acute polyarthritis is peculiarly characteristic of the disease in children; while involvement of the heart, and lasting injury to it, are more frequent than in adults. Furthermore, he speaks of the special predilection of this disease during childhood for certain areas, e.g., the joints of the cervical vertebrae (in which case the disease, because of the pain, rigidity and fever, is often mistaken for meningitis), as well as the formation of subcutaneous nodules, and the complication of chorea minor.

It is generally agreed that acute rheumatic polyarthritis is an infectious disease; but it is a mooted question whether it is due to a specific micro-organism, as yet undiscovered, or whether it may be caused by any of the various pyogenic cocci; also, whether the disease is located in the affected joints themselves, with general systemic disturbance produced by toxins, or whether it is a general infection, with localized action of the toxins on the synovial membranes of the joint cavities. Personal experience with streptococcus bacterin (vaccine) in the treatment of acute rheumatic polyarthritis, both in children and adults, has persuaded the writer to the belief that the streptococcus pyogenes (probably identical with "streptococcus rheumaticus") is the offending micro-organism, if not in all, then in the majority of cases; for the bacterin has in my experience given results that gave to it the appearance of a "therapeutic test."

The most common complication, and the most to be feared because of its far-reaching effects, is endocarditis. This usually manifests itself by the end of the first week of the disease, but may occur even earlier. Endocarditis may precede the joint involvement; or the latter may be of so mild a character that, as has been said before, the discovery of the endocarditis may give the first hint as to the rheumatic nature of the underlying trouble.

Next to endocarditis, pericarditis is a very important and most fatal complication, it being by far the most frequent cause of death in children having rheumatism, according to Ibrahim.

Pleuritis is another complication, occurring only in the most severe cases, and then only in connection with pericarditis. Other complications are nephritis, bronchitis, pneumonia, angina, and a purpuric rash in the neighborhood of the affected joints.

An important sequela of acute rheumatism is chorea minor, although in some cases the latter may precede or replace the joint manifestations. Like articular rheumatism, chorea is often complicated by endocarditis.

Treatment:—Prophylaxis is, of course, of first importance. Where there is a history of a former attack or attacks of polyarthritis or chorea, the child should be protected against chilling and wetting; the wearing of woolen underwear is often efficacious; the feet must be kept warm and dry. Hypertrophied tonsils should be thoroughly removed by dissection and snare, as it seems quite definitely established that there is a close relationship existing between tonsillitis and polyarthritis, the diseased tonsils furnishing an incubating ground for the infecting micro-organisms, which pass thence into the circulation (or at least their toxins do) and give rise to the arthritic process.

The prime requisite in the treatment of the *attack* is *absolute rest in bed* until all signs of joint involvement have entirely disappeared. If cardiac complication takes place, the stay in bed must be accordingly protracted. An equable temperature of 60 to 70° F. must be maintained in the sick room, so as to guard against relapses.

A light diet, with plenty of fluids in the form of milk, lemonade, potus imperialis, barley water, etc., are in order. When the temperature remains normal, vegetables and eggs may be added.

As remarked before, the use of a polyvalent stock "vaccine" prepared from killed cultures of the streptococcus pyogenes, has given, in the hands of the writer and a number of his professional acquaintances, such uniformly satisfactory results in the treatment of acute rheumatic polyarthritis, as to give the appearance of a "therapeutic test." However, as we are not absolutely certain as to the specific role played by the streptococcus, I have lately been using a mixed stock bacterin containing several strains of streptococci obtained from various sources (particularly from the throats of patients suffering from rheumatism and tonsillitis), together with the staphylococcus aureus and albus, and the pneumococcus. In many cases no salicylate treatment whatever was employed, the bacterin being relied upon exclusively; yet the recoveries were startlingly prompt. In every case in which the "vaccine" was employed, there was within from three to twenty-four hours, a marked amelioration of pain, resumption of joint-function to a considerable extent, and subsidence of pyrexia; and the patients almost invariably spoke of a feeling of well-

being (euphoria), and even of "stimulation" (this, of course, in adult patients, who could describe their sensations).

The dose of streptococcus bacterin for a child is from five million to thirty million killed cocci, according to age. The dose is given subcutaneously, with a sterile Luer all-glass syringe, and is repeated in twenty-four hours. A third, and if necessary subsequent doses may or may not be necessary, as indicated by the clinical symptoms. It is well to give a medium-sized dose, at gradually lengthening intervals of from two to four weeks, after recovery from the immediate attack has taken place, with the idea of keeping the child's immunizing mechanism at as high a pitch of resistance as possible, and so guard against a recurrence of the disease, and to if possible establish a lasting immunity. It may be remarked here that in those cases in which I have used the "vaccine treatment" before there was cardiac involvement, no such involvement took place subsequently; any agent which has such a prophylactic value should at once commend itself. And this treatment is free from danger.

Salicylates in some form have for a long time been the classic treatment of acute polyarthritis. And be it remarked, that the most careful observers have noted but little, if any, superiority of the "salicylates made from natural oil of wintergreen" over the synthetic products. Personally, I have found acetyl-salicylic acid most satisfactory. The best rule for dosage is to give a moderate dose, and repeat frequently *to effect*, then p.r.n.

A local application, composed of menthol, methyl salicylate (synthetic oil of wintergreen), and camphorated oil, usually gives considerable relief. The inflamed joints should be wrapped in soft cotton wadding.

It seems almost needless to say that elimination of toxic material should be encouraged, through bowels, kidneys and skin, by means of saline cathartics, diaphoretic fever mixtures, cool bathing (if the temperature be unreasonably elevated), and enemata of physiologic saline solution.

In the event of the development of endocarditis, it is to be treated just as when it complicates any other of the infections, by absolute rest in bed, and the application of an ice-bag to the precordium. Blisters applied to the precordial region are mentioned only to be condemned.

During convalescence there is usually a well-marked anemia to be remedied, as a more or less severe hemolysis is one of the characteristic accompaniments of acute rheumatism. Here iron, or iron and arsenic, are indicated. The combined arsenates of iron, quinine and strychnine give satisfactory results. Or the citrate, cacodylate, or arsenate of iron may be administered hypodermatically. This treatment gives a very prompt increase in the erythrocyte count, and in the hemoglobin percentage.

In conclusion, the writer would once more emphasize the necessity of being ever on the alert for the "mild" cases of acute rheumatic polyarthritis, as it is these cases, so easily overlooked, and consequently untreated, that result so disastrously as regards the heart.

[Contributed to MERCK'S ARCHIVES]

THE VALUE OF ORDINARY AND RARE CASES TO THE PRACTITIONER: POINTS IN TREATMENT

By Beverley Robinson, M.D., of New York

NOT long ago I was asked by one of my former house physicians why I did not visit the hospital, as hitherto I have always done. Frankly I answered, "I learn very little by so doing, and you and the other young physicians will not learn from me." At the same time I added, "I am, as always, very fond of you."

Now why is this and why should it be? It depends, I believe, essentially upon the overvaluation of rare cases and the newer knowledge. It is obvious to the attending physician that the consultant is not so familiar as he, theoretically or practically, with the fresh things being done; perhaps only a few months old. Again, he does not believe and often correctly, that the consultant can throw much light that, to him, is satisfactory upon the new and difficult cases that are present and under treatment. The consultant thoroughly understands the situation but is unable to correct it except by affirming what is also true—i. e., that rare and difficult cases are almost always found in hospital wards, and no matter how often one visits the wards one finds some cases which are unlike in certain symptoms or signs those we have seen previously. Again, we know time and continued observation alone make clear the diagnosis of many such instances. Meanwhile our treatment is at best uncertain and maybe changeable. True, if the case presents fever, pain, chills and other acute symptoms we now have recourse to the surgeon, who takes to the knife only too often and endeavors by incisions to clear up doubts and difficulties. Sometimes, I admit, the surgeon happily demonstrates a condition which to the physician was mere specula-

tion, but not always, or very frequently, I believe.

Then, too, the surgeons are often at a loss, and unless they believe they can cure underlying pathological conditions of different origin by laying open the region hidden to eyesight, they, too, are at fault, and even more so than the doctors.

Are these rare evidences of disease of much practical value to the practitioner? To the teacher, perhaps, they are, because he can talk to his students in a learned way and make them feel for the while that it will help them much in actual practice to be familiar with the oddities of disease. Alongside the rare cases are the old chronics, for whom good nursing and food is about the best we can do. As to cure, even the most enthusiastic, if he be sane, cannot believe it.

The acute diseases if not interfered with foolishly and with new-fangled ideas, have as a rule a tendency to get well. Some such cases go to a fatal termination despite the greatest care and most intelligent treatment. Outside the hospital practice, how is it with the usual practitioner? Rare cases are only seen at intervals, and often the intervals are long. When he meets with them he is able to study them from the beginning, and thus can mark accurately all the changes which occur. With these observations he is able ere very long to make an accurate diagnosis so far as possible. If the case is of a certain type and kind, neither he nor anyone else can cure. Relief of symptoms as they arise is the best one can expect. In very many cases the daily care and observation of the practitioner are simply invaluable. He it is who may prevent by useful methods employed at the right time the development of disease to the stage when little effectively can be accomplished. How true it is today that this aspect of the physician's role is minimized as to its importance. How much over-valuation is placed upon the consultant's dictum. Again, the very things that have been insisted upon by the family physician time and time again, and been unheeded, are, when advised by the consultant, regarded as evidence of greatest sagacity and, when too late, closely followed.

To-day, more than ever, we are recognizing the great value of preventive medicine but up to date we acknowledge it in general terms, and before we individually feel the need of it a step further must be made. When we have initial symptoms of disease we should call the reliable doctor immediately and do precisely as he advises. Then the advice will come home to us, make us abjure habits which, pursued, lead inevitably to a breakdown. It would be very simple in this brief article to give specific directions about many things in treatment. I shall limit myself, however, to the statement that many old, tried, simple remedies are still the best, and for two reasons:

1. They relieve symptoms when feasible to do so.

2. They cause no injurious, not to say fatal, results.

The great error, it seems to me, in medicine in our day is to magnify the importance of pathological conditions and then become sceptical because we know, or at least we think we do, we can't cure them with drugs or any known treatment. The other equally great error is to minimize the value of relief of symptoms. To do this without harm is, to my mind, almost primary in the great number of ordinary cases, and it is because modern medicine ignores or makes very light of it that the modern quack in his many forms and with lying circulars and criminal doings flourishes increasingly and does untold damage to the health and lives of very many, among whom may also be found the good and true in large number.

A CONTRIBUTION TO THE STUDY OF HERPES PROGENITALIS IN THE MALE*

By Noah E. Aronstam, M.D., of Detroit, Mich.

THE etiology of herpes progenitalis is as variable and manifold as that of eczema. The treatment heretofore instituted has been purely empirical, for there was no rationale upon which to base our therapy. In the opinion of the writer, a systematic classification of the causative factors underlying this malady would materially contribute to a more lucid understanding of the affection, and would be also conducive to a more rational mode of treatment.

In the subjoined paragraphs the author will endeavor to acquaint the reader with the etiology of the above dermotosis, its symptomatology, and its differentiation from other morbid lesions closely simulating the subject under consideration; succeeded by a brief discussion of the pathologic anatomy, and an outline of the modes and methods of treatment, in conformity with the causative agencies productive of an attack of herpes progenitalis.

Before entering on the subject proper, however, it may not be amiss to state that herpes progenitalis may involve any or all of the following regions:

* Urologic and Cutaneous Review, June, 1914.

1. The inguinocrural fold and the lower third of the hypogastric area, together with the upper third of the inner aspect of the thigh.

2. The integument of the penis, the prepuce, the glans and its sulcus, and the integument of the scrotum.

3. The perineal region to within one-half an inch of the anus, the ischiorectal space, and the lower gluteal area.

In dermatologic practice we are able to discern two chief varieties of herpes progenitalis, viz.: (1) That due to a peripheral neuritis with preceding or complementing subjective symptoms, as dermatalgia and pruritus. (2) That due to a vasomotor paralysis with less marked subjectivity and characterized by dilatation of the capillaries supplying a particular region of the urogenital tract.

These two main forms may be brought about by any of the following causes:

(a) Neuroses of a hereditary type.

(b) Debilitating diseases—especially the infections and exanthemata—may leave in their wake a depraved condition of the system, favoring the frequent occurrence of herpes progenitalis; to this category also belong the divers pathologic states of the blood, as anemia, chlorosis, hydremia, leucocythemia, uremia, etc.

(c) Autotoxemia, due to gastrointestinal derangements and the ingestion of unwholesome, indigestible, and obnoxious articles of food.

(d) Drug intoxications, notably those of the salts of metals, as mercury, silver, lead, zinc, and the various compounds of iodine; the continuous use of some of the active alkaloids and the habitual imbibition of malt liquors and alcoholic beverages.

(e) Senile degeneration, predilectively invading the peripheral nerve filaments of the cutaneous surface, is a very potent cause in the production of herpes.

(f) Neuroses and psychoses acquired post-natally and during adolescence; neuropathologic states of the central and sympathetic nervous system, and the peripheral nerve structures.

(g) The different dyscrasiae and diseases of metabolism, tuberculosis, malaria, the uric acid and rheumatic diathesis, diabetes, scurvy, and not infrequently leprosy. (Cases are on record of the repeated occurrence of herpes progenitalis in lepers.)

(h) Local conditions. Among these may be enumerated the following: An elongated and constricted prepuce, the smegma bacillus, irritating discharges from the genital tract, especially gonorrheal secretion, and that caused by vegetations; the menstrual flow; vaginal discharges due to uncleanliness, specific causes, or to the trichomaines vaginalis.

(i) Over excitation of the glans penis and prepuce through excess in venery or by masturbation.

(j) A peculiar darthic diathesis or predisposition on the part of the individual to the affection under discussion, with or without participation of any of the above etiologic factors, as evidenced by recurrent outbreaks of herpes progenitalis.

(k) Reflexly, by oxyuris vermicularis and ascaris lumbricoides, affections of the prostate, sexual neurasthenia, spermatorrhea, prostatorrhea, etc. It may be remarked right here that children are by no means exempt from progenital herpes, judging from quite a number of cases observed in children's homes.

(l) And last but not least, a special bacillus has been attributed with the pathogenesis of the eruption.

But little can be said of the symptomatology of this affection, for in no disease do we find so well marked characteristics as in urogenital herpes. A few points, however, must always be borne in mind upon entering a conclusive diagnosis, viz.: (1) The *grouping* and *concentricity* of the lesions; (2) the *subjective* symptoms, which almost always precede or accompany them, at least in 75 per cent. of all cases.

The most significant and important features in the diagnosis may be formulated as follows:

1. *The multiplicity and grouping of the lesions, i.e.*, we commonly encounter a number of vesicles arranged in a circular or semicircular manner, usually situated upon the distribution of the peripheral nerve filaments. More than one group can, in the majority of cases, be detected.

2. The presence at some time during the course of this dermatosis of pruritus and pain.

3. The indefinite period of incubation which differentiates it from the simple multiple chancroid, which period of incubation never exceeds ten days.

4. The absence of induration or cartilaginous thickening at the margin or border of the individual group or circle, thus eliminating the probability of an initial lesion.

5. The lesions are destitute of any moisture, unless the vesicles have been irritated or have ruptured spontaneously or accidentally, when they assume a serous, or if infected a purulent, secretion.

6. The lesions become covered with crusts soon after the absorption of the serum in the vesicles, a state of affairs seldom, if ever, exhibited by the chancroid.

Resolution of the vesicles is accomplished within six to ten days after their appearance leaving behind a pinkish area, which soon fades, however, the skin or mucous membrane returning to its normal color, devoid of any stigma to mark the former site of the original lesion.

These few diagnostic points should amply suffice, the writer has reason to believe, to establish a correct diagnosis and serve to eliminate the possible existence of other lesions with which herpes progenitalis may erroneously be confounded. It is obvious that a tabulation of the differential points relative to the chancroid, the initial scleroma, and preputial vegetations, would be unnecessary and superfluous, provided the above features of the affection be kept in mind.

Morbid Anatomy.—Whatever the cause of herpes progenitalis be, either one of the following two chief pathologic states of the peripheral nerve endings supplying the urogenital tract is apt to be present, namely: a peripheral neuritis, or a local vasomotor paralysis. The former condition is in almost every instance followed sooner or later by the latter. The inflammation takes place in the epineurium, compressing the neural cells or parenchyma to such an extent as to induce a curtailment in the conductibility of the nerve current. The nervi vasorum, deprived of their functional activity, engender trophic disturbances in the tunic of the capillaries, which soon become manifested by a diapedesis and exudation of serum between the cutis vera and the layers of the epidermis, resulting in the formation of vesicles. Absorption of the serous exudate and inflammatory deposit of the nerve sheath takes place within six to ten days, when the regions involved are brought to a *restitutio ad integrum*.

French dermatologists have detected pigment crystals resembling indican within the epineural covering; these pigments are probably due to a retrogression or decomposition of the blood's coloring matter, which was transfused during the process of chemotaxis.

Treatment.—This should be directed toward the removal of those causative factors favoring the occurrence of herpes progenitalis. In a great number of cases, an attack of herpes can be early subjugated or aborted, if not entirely prevented. Our efforts should, therefore, consist in the detection of the causes instrumental in the production of this dermatosis and its immediate eradication. We should invariaby attempt to barricade all avenues to the future entrance of the foe, so to speak.

Of course, in cases of hereditary neurotic predisposition, or in the so-called "darthic diathesis," but little, if anything can be accomplished in the establishment of a permanent cure, for notwithstanding our utmost endeavors, the malady will exhibit a marked obstinacy, and in spite of all our efforts, shows persistency and a tendency to recur.

If the malady be due to a depraved condition of the blood, hematinics, notably the compounds of iron, aresnic, and manganese, may be tried.

The amount of carbohydrates should be restricted, as they tend to produce flatulency, and besides tax bodily oxygenesis, thus calling into play an increased expenditure of neural force. Indigestion should be avoided as much as possible, and only easily digestible, nutritious, and wholesome food be allowed. Pickled articles of food and various condiments must be interdicted, as well as dishes made of the crustaceans. In no way shall the patient partake of such substances as are apt to create autotoxemia by virtue of their decomposition within the *prima via*, and the formation of ptomaines and other substances of putrefaction.

In deranged conditions of the alimentary tract, some of the simple bitters are very valuable, and may be profitably combined with some preparation of cascara. Malt liquors and spirituous beverages, as well as tea and coffee, are not well borne in those cases, as they invariably excite the neurotic element.

If herpes be due to the cumulative action of some of the metallic salts, their administration should be immediately discontinued, and not resumed until all traces of their presence are eliminated.

Senile degeneration requires a tonic course of medication, the judicious use of phosphorus, arsenic and strychnine.

If herpes is the result of acquired functional neuroses or psychoses, or actual pathologic states of the nervous system, we are oftentimes forced to resort to the exhibition of some of the analgesics, sedatives, and nervines, as codeine, cannabis indica, hyoscyamus, camphor, valerian, the salts of zinc (preeminently the phosphide), and tentatively the bromides.

We often encounter cases of progenital herpes which are undoubtedly the concomitant of uricemia; under these circumstances we must utilize the salts of lithium (preferably the citrate and benzoate), potassium and sodium, in conjunction with colchicum. If the lesions are but an indication of the rheumatic diathesis, we must needs direct our attention to the

salicylates, aspirin, atophan, iodides, the pure oil of betula lenta, and the Bulgarian bacillus.

Not infrequently do we meet herpes progenitalis in the later period of the secondary stage of syphilis, in individuals who have never been subject to an attack of herpes before, as it will be shown in the appended report of cases.

The writer is not prepared to state at this particular time in what relation these two affections stand to each other. Tuberculosis may likewise induce recurrent attacks of herpes, if reliance be placed upon report of cases in the practice of some French observers. Under those circumstances, we will do well to put the patient on specific medication and adopt the usual treatment recommended for tuberculosis.

The treatment of herpes progenitalis originating from local causes depends chiefly upon the particular factor exciting an occurrence. Thus, in cases of herpes consequent to the decomposition of smegma cleanliness is the main remedy to be relied on. When the prepuce is too elongated or tight, circumcision will obviate the trouble and serve as a valuable prophylactic against future herpetic manifestations. Discharges of any kind emanating from some portion of the genital tract must be checked before herpes can eventually be made to yield.

To whatever local condition we may ascribe the existence of progenital herpes, and in whatever manner the dermatosis be brought about constitutionally, the indications for treatment may be summed up as follows:

1. Remove the cause and treat any systemic disorder acting as an exciting or predisposing factor.

2. Observe strict cleanliness of the parts involved.

3. Use protectives to exclude any irritation or infection of the lesions.

4. If the latter has occurred in spite of our efforts at prevention, treat the resulting ulcer antiseptically with the various agents at our command.

The first of these measures has received ample consideration in a preceding paragraph. The second can be easily secured by daily ablutions of warm water, to which a small amount of boric acid or sodium biborate has been added, after which the area may be dried with a pledget of absorbent cotton, and one of the following protective powders or solutions applied:

Bismuthi Subnitratis,
Acidi Borici .....āā 12.0 Gm.
Aristolis..... 8.0 Gm.
M. et fiat pulv.

or:

Europhen..... 8.0 Gm.
Zinc. Oxidi,
Bismuthi Subnitratis,
Pulv. Amyli.....āā 12.0 Gm.
M. et fiat pulv.

Prior to the application of the above formulæ, it is advisable to moisten the regions with a little glycerin, in order that the powder should properly adhere to them. Chemically pure talcum or the palmitate and stearate of calcium and magnesium, to which 5 per cent. of ichthyol or balsam Peru has been added, will admirably serve the purpose.

In cases where the lesions are situated on the glans or prepuce, they should be protected from friction, pressure, or irritating secretions by separating these two structures by means of a piece of sterile gauze containing a slit in the center, through which the glans penis is passed and the prepuce drawn over it. When the vesicles are located in the space between the scrotum and thigh, they should be covered by borated gauze and a loose bandage applied.

Should this for obvious reasons, be inexpedient or impossible, then the areas may be protected by painting them with flexible collodion containing any of the above enumerated combinations in solution or suspension. After evaporation of the ether, a pellicle is left behind which sufficiently protects the parts, besides enabling the incorporated remedial agents to exercise their medicinal effects.

Where the lesions have ruptured either through friction or spontaneously, and have become infected, we must endeavor to keep them scrupulously clean and free from all accumulating discharges by washing them with some mild antiseptic solution, as boric acid, lysol, etc.; following this, any of the above mentioned preparations may appropriately be applied. *At no time should we attempt to cauterize these ulcers or use any strong antiseptic or irritant, unless they be contaminated by concomitant chancroidal pus, and even then with a great deal of care and circumspection.*

Strong applications should be avoided lest the patches assume an angry and eczematous character, and the result be worse than the original lesion.

When thus treated, the vesicles soon desiccate and become covered with an insignificant crust, beneath which epithelial regeneration takes place. The crust ultimately falls off, exposing a pink area, which soon fades to the color of the normal skin.

The entire cycle is completed in ten days.

In conclusion, the author wishes to annex a report of cases which may serve as an adequate illustration of the topic discussed.

Case 1.—M. W. Age, 35. Mulatto, waiter, married, presented himself for treatment. Family history: Father died of phthisis pulmonalis. Previous history negative. He has always been of slim stature (weighing not more than 110 pounds) and of delicate health.

St. pr.: contracted a meatal chancre a year ago, which was soon followed by the secondary symptoms of syphilis. He has received appropriate treatment, with rapid disappearance of all symptoms, and his general health has remarkably improved. Since the first manifestation of the syphilides he has repeatedly noticed scattered vesicles on the integument of the penis; they remained stationary for about three or four days, after which time they dried up, became covered with scabs, and ultimately disappeared. He always experienced a burning sensation and some pruritus at the site of the lesions. The present eruption is his fourth attack.

Examination revealed the presence of two groups of herpetic vesicles, situated on the integument of the prepuce, unbroken and extremely sensitive to the touch.

Treatment.—This consisted in the administration of the syrup of hydriodic acid in conjunction with the hypophosphites and zinc phosphide, together with the topical application of a dusting powder, composed of equal parts of boric acid, bismuth subnitrate, and aristol. He was directed to moisten the areas with some glycerin prior to the application of the powder. Under this regime, the vesicles soon vanished. He was advised to continue the internal medication for at least four or five weeks. Four months have elapsed since this last attack, during which time he has been unmolested by any recurrences.

Case 2.—M. S. Age, 24 years. American, clerk, unmarried. Family history reveals a neurotic tendency. Past history negative, except for some of the exanthemata during early childhood and for recurring attacks of the present malady.

St. pr.: Almost invariably after coitus, he noticed several groups of vesicles, situated either on the integument or mucosa of the prepuce, or upon the glans. There is some smarting sensation accompanying the eruption of the lesions. The period of incubation is indefinite and varies with each individual attack, at an average from two to six days. The lesions, when mature, occasion considerable discomfort. They make their departure within about ten days from the date of onset. The prepuce is somewhat elongated, although not constricted, being freely movable; the preputial sulcus is filled with smegma. A few groups of herpetic vesicles are visible on the glans penis, near the corona.

Treatment.—He was advised to cleanse the prepuce and glans scrupulously with hot water (to which some boric acid has been added) after coitus, and dust on a powder, composed of boracic acid, zinc oxide and europhen, subsequently. Valerianate of zinc in conjunction with cannabin and strychnine phosphate was prescribed as a prophylactic. He was told to report at the next recurrence of the vesicles.

Later.—Several months have elapsed since, and notwithstanding repeated cohabitation he enjoys permanent freedom from the herpetic lesions.

Case 3.—M. McC. Age, 28 years. White, Irish, laborer, married. Family history negative. Past history: Patient states that he has had ulcers on the glans penis, which responded to local treatment.

St. pr.: This is his third attack. Herpetic vesicles are situated in the sulcus glandis; there are three groups of them. The prepuce is very tight, movable only with considerable difficulty, and the preputial cavity contains a quantity of foul-smelling and decomposed smegma.

Treatment.—Circumcision was performed, and the author has reason to believe that the possibility of recurrences may be excluded.

Case 4.—Geo. W. Age, 27. White, American, jockey. Family history negative. Past history: Has had pneumonia during childhood; gonorrhea about one year ago.

St. pr.: Period of incubation in this case was about ten days. He has experienced considerable pain and itching prior to the appearance of the lesions. Examination revealed about seven or eight groups of vesicles, irregularly distributed over the glans, prepuce, and integument of the penis. There is some glandular hyperplasia in the right inguinal region. Pruritus is marked, especially at night.

Treatment.—He was told to bathe the genitalia in warm water twice daily and then apply a drying powder composed of equal parts of boric acid, bismuth subnitrate, and zinc oxide. This is a recent case, and the writer was unable to gather supplementary information relative to any recurrence of this malady.

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THE MANAGEMENT OF LARYNGEAL TUBERCULOSIS IN SANATORIA AND PRIVATE PRACTICE*

By Wolff Freudenthal, M.D., of New York

As a result of a large number of post-mortem examinations, Naegeli asserted that in 97 per cent. of all adults some kind of a tuberculosis lesion is found. He concludes: "Every grown person has tuberculosis." (Virchow's Archiv, Vol. 160, 1900.) This tends to show that an occasional infection is not dangerous to the average person. To those exposed, the danger lies in constitutional weakness, in close or prolonged contact with tuberculous patients in the family life or business relation. The disposition is considered as the principal etiological factor, in comparison with which the bacilli play only the rôle of a match, which though inoffensive in itself, if thrown carelessly aside may cause ruin and destruction, provided several factors combine to cause its ignition. Many fires occur daily, and still more cases of tuberculosis. But it is not timely to go into details of the etiology of pulmonary tuberculosis. Everybody knows that it is prevalent to a dreadful degree, and that in spite of the active, often rational, often nonsensical, crusade against it, it has decreased to only a slight extent.

The most severe and serious complication of the disease is the laryngeal involvement. No other condition subjects the

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patient to such a severe test of endurance as does a deeply ulcerated tuberculous larynx. Few patients in any condition demand relief more earnestly, or spur the physician to greater effort, or demand more attention, or are a source of more anxiety than these cases. Should we not try everything to relieve these most wretched of all patients of their suffering?

It is a great pity that many of our fellow practitioners still believe that tuberculosis of the larynx is an incurable disease. But a short time ago a colleague in charge of a large hospital for tuberculosis cases expressed this view: "The patient is lost as soon as the larynx becomes involved." This would be most hopeless if statistics alone had not proven the fallacy of such a belief. Permit me to quote only one and a very reliable investigator, viz., W. Jobson Horne, of London, who for many years had conducted both clinical and pathological research (Journal of Lar., etc., Dec., 1905). His results "showed that 97 per cent. of cases of phthisis experienced symptoms referable to the larynx at one time or another in the course of the disease, and the investigation further went on to show that the routine examination of the larynx in persons suffering from symptoms suggestive of early pulmonary disease would often enable a diagnosis of phthisis to be made at a time when the stethoscope yields no evidence, and that is at a time when the physician can be of the greatest service to his patient." Even if we do not accept these statistics as positive proof, still all men of experience will agree that the larynx is affected in an extraordinarily large percentage of cases, and if this be so it must be equally true that many of them are cured, and, indeed, that is what happens quite frequently with or without our making a diagnosis and with or without treatment. It is true that a certain proportion of the milder cases do get well merely by being placed in proper hygienic surroundings. But how about the others? Can any of these be saved, or is it useless to bother with them? In order to present an outline of my results and plan of treatment, let us consider, first, the management of all cases afflicted with tuberculosis of the larynx in a well-equipped sanatorium. It should be an established rule to examine every case that enters a sanatorium as to the condition of the upper air tract, whether the patient complains of this or not. If this is done as a matter of routine a number of pathological conditions will be found, the correction of which will have a decidedly beneficial effect, not only locally, but as regards the pulmonary affections as well. Permit me to refer to several articles published by me a number of years ago, which have an important bearing on our theme. It was found that many of these patients suffered from an atrophic catarrh of the nose, or from a milder form of this, *i. e.* a rhinitis sicca. Most of these persons have wide nasal passages, and yet they feel that they can not get any air through them. The reason for this is that the mucous membrane of the nose is dried out, or covered with scabs and crusts. The air spaces are large enough but the air itself cannot be "assimilated." I might compare this condition to that of a patient suffering from cholera. He is craving for water, but no sooner drinks it than it leaves the system again without being absorbed. So it is with the air inhaled in the above affection. In the University Clinic at Kiel, Germany, my experiments were repeated by Dr. M. Behr and were corroborated in every instance. (Brauer's Beiträge zur Klinik der Tuberkulose, 1904, p. 37.)

Great stress should be laid upon these findings since we gain two points by giving them attention. Firstly, in many patients the characteristic hacking cough described in all textbooks as a premonitory or incipient stage of tuberculosis, has its source in the pharynx, being caused by the dry secretions of atrophic rhinitis getting down into this region from the nose; or you may find simply a postnasal catarrh. If one treat this nasopharyngeal catarrh according to the customary methods, one will be sure to eliminate the cough originating in the above manner. In this way we have accomplished a great deal already, for here is a chance of arresting the disease in the beginning. "Principiis obsta" is an old rule which should be followed. On the other hand, one will benefit the patient by restoring the nasal mucosa to a normal condition, so that the inhaled air can be warmed and moistened and thus rendered fit for breathing purposes.

The following example may be cited. A physician from a neighboring city called on me and told me that the week before he had had a pulmonary hemorrhage, night sweats, and rise in temperature, and there had been tubercle bacilli in the sputum; in short, he gave a plain history of tuberculosis. The doctor called on me to find out whether his hoarseness was due to laryngeal tuberculosis, and, if so, he knew he was lost. On examination, a bleeding vessel was seen in about the center of the left vocal cord—a very rare occurrence indeed. This was cauterized with a strong solution of chloride of zinc. Besides, his

nose and pharynx were sprayed with a mild alkaline solution, on account of his nasopharyngeal catarrh, and as a result the cough stopped almost instantaneously (he had been coughing for the last ten years, or more) and he suffered no longer from night sweats or temperature. I do not claim to have cured his pulmonary condition with these simple applications, which every beginner in laryngology can make, but the constant irritation from the pharynx and nose was stopped and so a rational and very simple treatment of his general condition was inaugurated.

Another obstacle frequently encountered is a deviation of the nasal septum or spurs. If they are of such a nature as to materially interfere with respiration they should be removed. This can be done easily with very little loss of blood and in almost any stage of tuberculosis. Adenoids should also be curetted, but look out for the tonsils, *i. e.* do not operate on them if the disease has been positively established. I have seen several fatalities occur in patients who had been sent away by me to recuperate. They were operated on against my advice and died of pulmonary hemorrhage in from three to eight days after tonsillectomy had been done. If a simple laryngitis is present, treatment of this will be indicated if it causes a cough. If not, leave it alone. But if tuberculosis of the larynx has actually set in, what then?

The management of such cases is often one of the most difficult tasks that confront the laryngologist. But it is worth all the work and all the pains we take, for the progress in the therapy of this condition has been marvelous. It is natural that these patients should have sanatorium treatment. Here again I want to make a plea for these poor sufferers. We admit so-called early cases, which are no menace to the community nor to their family, as long as their sputum is negative. We build expensive places for those who can be housed just as well in a much less elaborate style, but we frequently reject those who need it most, *i. e.* the tuberculous subjects with laryngeal complications. That hospital is the best, said a prominent German scientist, which admits the worst cases. According to this view, with which I heartily coincide, there are mighty few satisfactory sanatoria for tuberculosis here and abroad. This is all wrong, as every institution of this kind should be forced to admit patients with laryngeal tuberculosis. The general treatment received there of itself often exerts a curative effect in incipient cases. The rest-cure, especially of the voice, the good air and suitable nourishment, are sometimes so stimulating that slight lesions, as superficial erosions, slight infiltrations, etc., are healed.

In other instances, in which ulcers appear, with papillary outgrowths, and localized and diffuse infiltrations, a more active therapy is indicated. No matter in what state the lungs may be, two requirements must be met, viz., to stop the cough and remove the dysphagia. There are various means at our disposal, and it will depend largely upon the experience and judgment of the physician as to which will be chosen. Some have proposed major operations, *i. e.* the entire removal of the affected parts right into the healthy tissue, as has been done surgically in other parts of the body; in other words, partial or total laryngectomy. Theoretically, this is the correct mode of procedure. Practically, however, it has not proven a success. By far the majority of patients operated on in this way succumb quickly to pneumonia and other complications, and only few recover from it. Even simple tracheotomy, which has been recommended as a prophylactic measure, is of no value. It is not more than six months ago that I was forced to do a hurried tracheotomy for dyspnea in a young woman. The wound never healed, but kept discharging a mass of pus, and apparently a new infection of the system had set in. She died recently. Such fatalities perhaps occur oftener than we know. Other patients survive, but have to wear a tracheotomy tube for years without benefit. Nowadays tracheotomy should be performed only on account of dyspnea which cannot be otherwise relieved.

We are therefore limited to minor surgical work within the larynx. It is well known that the disease manifests itself frequently on the posterior wall (its anterior portion) and on the anterior wall, *i. e.* the epiglottis. For a long time deep ulcerations and infiltrations may persist on the lateral wall of the interior of the larynx without causing dysphagia or any other serious trouble; but difficulties arise as soon as the region of the arytenoids or the epiglottis becomes involved. Then dysphagia sets in and the fear of the dreaded pain in swallowing reduces the amount of food taken to a minimum. Therefore, what can be done? This condition must be overcome by every means at your disposal, or your patient is lost.

Let us start with the epiglottis. This organ may be severely affected, and in that case is apt to nullify all therapeutic efforts in the larynx and lungs. If ulcers have formed on its lingual side they are

easily treated by means to be discussed shortly. At times they yield quickly to treatment. On the other hand, we may find the epiglottis greatly infiltrated, either principally on one side or equally on both sides (the well-known omega and turban-shaped forms). In such cases, if dysphagia is pronounced, all our efforts towards alleviating it will fail. (1) On account of the inability to reach the ulcers lower down in the larynx, the epiglottis occluding the introitus laryngis, and (2) because ulcers have formed on the lower, *i. e.* laryngeal surface of the flattened epiglottis, which cannot be reached by any application. Under these circumstances the best we can do is to amputate the epiglottis either with some cutting forceps, as for example A. Alexander's of Berlin, or, better still, with the cold snare, as advocated by P. Gerber (Zeitschrift für Lar., Rhin., etc., p. 739, 1909). This operation is extremely simple and afterwards enables you to treat the lesions further down. Occasionally improvement is noticed immediately when the epiglottis is the only part affected. If, however, ulcers are present further down, they should be especially treated.

Ulcerations: The first thing to strive for, as has been said above, is to remove the pain in deglutition and incidentally the laryngeal cough. To accomplish this we have to produce local analgesia of long duration, *i. e.* painlessness of the parts lasting for days. We have given up using cocaine daily, or even several times a day, for such purposes. This drug produces anesthesia and aside from its cumulative, toxic effect, has other shortcomings. Prolonged analgesia can be produced by orthoform or anesthesin. They can be applied as a powder or in the emulsion recommended by the writer some years ago. The important points to be remembered in applying the emulsion or the powder are that the parts to be treated must be clean. If they are not, any bland spray will remove all the débris. Secondly, these drugs must be applied in such a manner that they remain on the ulcer. If too much is applied at one time the patient will cough it all up. I take pleasure in repeating the formula of the emulsion here:

Orthoformi, 6 Gm.
Mentholis, 0.5 to 5 Gm.
Hexamethylenaminæ, 0.50 Gm.
Olei Amygd. Dulc., 15 Gm.
Pulv. Acacia, 10 Gm.
Aquæ, ad 60 Gm.
M. f. emulsio.

Such medication alone, if used correctly, will often produce cicatrization of an ulcer. This is accomplished by simply putting the parts at rest through analgesia. To make this clear I may be allowed to mention here the investigations of Prof. G. Spiess on the value of anesthesia (analgesia) in inflammatory processes. The old classical symptoms of an inflammation were: rubor, calor, tumor, and dolor. According to the observations of Spiess, however, it is evident that the "primary dolor" is the factor in causing inflammation. The irritation of the sensitive nerves leads reflexly to hyperemia, *i. e.* rubor. That naturally causes calor and leads to a tumefaction (tumor). Spiess produces anesthesia of the larynx by submucous injections of novocaine (2 per cent. to 5 per cent.) and has thus verified his experiments (Archiv für Laryngologie, Vol. 21, No. 1). I have not used these injections, but have reached the same end with applications of orthoform or anesthesin and feel convinced that Spiess is right in his deductions.

But these analgesic remedies, like everything else, will cure only a certain percentage. The reasons for these failures are: first, in some instances we cannot reach the seat of the ulcers; second, they are sometimes so located that no fluid or powder will adhere (posterior laryngeal wall), etc., and thirdly, some ulcers will not heal under analgesic treatment alone. In that event we resort to caustics. Of these I would mention zinc chloride, in solutions ranging from 3 to 10 and 15 per cent. silver nitrate, argyrol, etc. These caustics have to be followed within about half an hour by the insufflation of orthoform in powder or in the form of the emulsion. The most effective caustic is the galvanocautery (point), used first by Grünwald of Munich. (Münchener med. Woch., No. 25, 1903) and (Wiener medizin. Woch., No. 28, 1905). I have made use of the galvanocautery in patients with deep solitary ulcerations and in such cases good results will occasionally be obtained. For multiple ulcers this method cannot be recommended. The reaction after the galvanocautery is sometimes unpleasant and unavoidable. Like Kofler, of Vienna, I have noticed perichondritis of the arytenoids in a case in which the cautery was applied too near the processus vocalis. There are other reactions which, however, are omitted here.

Instead of the galvanocautery I have also employed fulguration. In the Laryngoscope, July, 1912, I published my experience with this method which gave some encouraging results. Since that time suspension laryngoscopy has been introduced which has opened new channels for treatment. Consequently I have given up

the application of the high frequency current as well as of galvanocautery, at least for the present, and now operate mostly under suspension laryngoscopy. This new method of Killian's, described by me on different occasions, has opened a new field for our therapeutic endeavors. It is quite impossible in this paper to give a description of the method; suffice it to say, that with it the larynx is opened widely to direct inspection and that there is an excellent opportunity to reach its different parts, especially its posterior wall, which is so easily affected. We are enabled to curette thoroughly all ulcerations which, after all, is the most satisfactory surgical method. I have done this frequently and have had some excellent immediate results. I say immediate, because these ulcers recur and have to be curetted over and over again. The procedure is not painful, the loss of blood minimal, and the dangers connected with the method practically nil.

After doing curettage under suspension it would be best to apply a strong caustic, as the galvanocautery or pure lactic acid. There is, however, the danger of edema of the larynx, for which we have to be constantly on the lookout. For that reason it is often wise to proceed slowly, *i. e.* to curette only some of the most troublesome parts at the first sitting. When, for some reason, the whole, or part of the epiglottis has been removed and ulcers then become visible they should be curetted in the same sitting under suspension laryngoscopy.

Excisions of infiltrated portions or of granulations: Some years ago Grünwald, Spiess, and other laryngologists expressed the view that half-hearted surgery was to be condemned here. They preferred to remove as much as possible of the affected parts. With suspension laryngoscopy they now have the best chance to accomplish this. But is it wise to do so? There was a time when I did a good deal of such work. Undoubtedly some persons were benefited, but a large majority were not, and therefore the method was given up for a time and the patients were apparently as well off as before. The only exception to this rule were infiltrations causing dyspnea, and in such instances something had to be done to relieve this. With the appearance of suspension laryngoscopy things have changed again. The first time I operated by this method was for interarytenoid papillary outgrowths. Several laryngologists of New York City, including myself, had tried in vain to remove the entire mass by the indirect way. I then attempted suspension laryngoscopy and I was amazed at the ease with which the work could be done. Other observations soon followed and one point was noticed immediately. The infiltrations and tumefactions in the larynx are always larger than they appear to us, and it was frequently a matter of surprise what big pieces could be removed before normal tissues were reached. Soon afterward we encountered cases that have become more frequent nowadays. These show advanced tuberculous lesions of the larynx often very difficult to diagnose, but without positive signs in the lungs. These are most interesting and instructive cases and they bring nearer to us the possibility of a primary infection of the larynx. One example may be cited:

Case 1.—G. H., a sailor, aged forty, was referred to me in September, 1912, on account of hoarseness, which had come on gradually during the last ten weeks. No pain, no cough, but a heavy feeling in his chest. The larynx showed an irregular infiltration of the left vocal cord and a thickening of the entire right one, which was immovable. Quite a large ulceration was seen on the posterior wall. In spite of the fact that the lungs showed no positive evidence of any tuberculous affection I considered the case to be one of tuberculosis. On October 18, several pieces were removed from the vocal cord and the ulcerated surface was curetted under suspension laryngoscopy. The immediate result was satisfactory. The ulcer healed and the patient could breathe easier. Within a week he left for a country place. At the beginning of December, 1912, he returned, as he did not feel comfortable. On that day the sputum for the first time showed the presence of a few tubercle bacilli. There were some new ulcerations, which were treated with orthoform emulsion. The pain disappeared, but not the ulcers. These were curetted again under suspension on December 20, and once more the patient felt so much better that he left for the mountains. In February, 1913, he returned to the city with some dyspnea. Sputum positive, but chest findings almost the same as in the beginning. The larynx, however, had changed surprisingly. There were irregular masses springing up from both vocal cords; the arytenoids were markedly swollen, so that very little of the posterior wall was visible, and little space was left for breathing. Patient did not care to undergo another operation, and was kept under observation, the dyspnea growing steadily worse. March 17—The dyspnea was so marked that I came very near doing a tracheotomy at my office, but finally succeeded in getting him to a hospital. There I removed five large pieces of tissue from the larynx under suspension laryngoscopy, local anesthesia being employed. The bleeding during and after the operation was minimal, in spite of the fact that there had been a very extensive removal of tissue. The further history of the case proved that we were right in our deductions. After the operation the patient was put to bed and ice applied externally and given by the mouth. All the instruments required for tracheotomy were placed next to his bed in case of immediate necessity. His breathing was better than before the operation, but about six hours later it again became quite bad, due, undoubtedly, to edema of the larynx, which, however, subsided gradually. March 27—Ful-

guration was applied to hasten the process of healing, with the result that the edema again appeared next day, together with dyspnea. This subsided after application of cocaine and adrenalin, but soon recurred. Examination showed a dislocation of the left arytenoid, which was flattened and lower than the right one. The dyspnea became so marked that on March 31 I removed part of the overhanging tissue from the right vocal cord. After that the breathing remained free, and about two weeks later the patient again left the city. In this case the thorough surgical procedure was surely life-saving and this could only be accomplished with the aid of suspension laryngoscopy.

I have operated on a large number of patients with similar infiltrations, athough cases as pronounced as the one just cited are rare, and I have invariably found that the infiltrations recur sooner or later. But while it was formerly noticeable that the general condition of the patient suffered after excision (fever, etc.), with suspension laryngoscopy it is quite the reverse. The patients generally improve after the reaction is over and also feel better subjectively. However, I cannot yet give a final opinion on that question, as I want to see many more cases before doing so. One point is certain: that the excision of an interarytenoid thickening is often of the greatest benefit in the early stages of the disease, if followed at the same sitting by a thorough curetting of an ulcer below it, which generally cannot be seen by indirect laryngoscopy. All former attempts at the removal of those evenly spread interarytenoid infiltrations and papillary outgrowths appear to us now simple playwork.

If infiltrations as well as ulcers recur, we have to excise and curette them under suspension as often as may become necessary and as long as the patient derives any benefit. We do this in spite of the very pessimistic remarks of one of the best known laryngologists, viz., Professor Hajek, of Vienna, who said (Centralblatt f. Lar., p. 20, 1914) that he would make the best prognosis in the case of those patients who live under the most favorable hygienic conditions and are not being treated locally at all. My experience, which extends over twenty years' work in the Montefiore Home, a sanatorium for the tuberculous, differs. Good hygienic surroundings, a nourishing diet, etc., are certainly most desirable and ought to be encouraged. Even when you advise your patient to move from the cellar of a tenement house to the top floor you have improved his hygienic and climatic conditions, sometimes just as much as by sending him to a climatic resort. But these changes will never prevent the appearance of ulcers, etc. On the other hand, I have seen patients living in the worst and most unhygienic tenement districts of New York City who came to the dispensary with marked dysphagia and improved after careful treatment even in spite of their surroundings. One example of many may suffice to prove the former statement:

Case 2.—Mr. C. B. was referred to me by a laryngologist of a neighboring city. Patient had deep ulcerations on both sides, interarytenoid thickening, and below that in the trachea an ulceration; advanced tuberculosis of lungs. Under suspension he was curetted thoroughly and left for the mountains ten days later in a greatly improved condition. Four weeks later he had to return to the city, as he had difficulty in swallowing, which was not relieved at all by frequent applications by the local laryngologist. Again he had to be curetted under suspension laryngoscopy, whereupon his condition quickly improved. After a further treatment of two weeks I sent him to one of the best known sanatoria, which has a recognized laryngologist on its staff. Patient stayed there four weeks, had all the benefits of the sanatorium, but his laryngeal condition grew worse. He was given an atomizer containing a 2 per cent. solution of cocaine, but his dysphagia became so pronounced that he dreaded meal time. Finally he was advised to return to this city, which he reached in an almost moribund state. With the simplest means possible, *i. e.* those described above, analgesia was produced and within a few days he could swallow nourishment. Now, *i. e.* twelve days later, he has gained the two pounds which he had lost at the sanatorium.

This case is not unique; on the contrary, in most sanatoria they send the patient back to the city as soon as there is a sign of laryngeal involvement. This is not a desirable condition; for what use are the sanatoria if they cannot, or do not care to treat those most dependent upon them? If a patient in a sanatorium shows but slight infiltrations of the bands or the aryepiglottic fold, or slight injection of the cords without any symptoms excepting perhaps a little hoarseness, he does not need to be treated locally. But with the appearance of more serious symptoms, especially dysphagia, it is my practice to be as active as possible and not to limit myself to one remedy alone. For this reason the other means used by me will now be given. Very helpful are the different rays used therapeutically for the past years, viz. (1) the actinic rays; (2) the high frequency current, and (3) the rays emanating from radium.

1. The actinic rays. One of the first orders given to a patient is to keep in the sun as much as possible, *i. e.* in the winter. In the summer the early morning hours are especially recommended, *i. e.* up to 9 or 10 a. m., when the sun is not so very hot. As a substitute for the sunlight the electric arc light can be used and its chemical or actinic rays applied externally

to the affected parts. As an adjuvant to other remedies it is sometimes of great benefit for its analgesic effects.

2. The same can be said of the high frequency current. Of late it has been my custom to apply the current intralaryngeally. It seems to have some curative effect in producing cicatrization. Applied for a longer period externally, it relieves dysphagia to a certain degree.

3. Radium. The local use of radium has been followed by marvelous results, but they were very exceptional. Patients who have been exposed for half an hour felt free from pain for several months. In these cases there had been no cough and the lungs were but slightly affected. Even when all other means had failed, relief from pain for a day or for a few days frequently occurred. Yet, for obvious reasons we must avoid making promises in regard to this much abused and occasionally wonderful element. I have worked for ten years with radium and would refer to my publications.

Injections of Alcohol.—There are cases in which not one of any of the therapeutic measures mentioned will give relief. For such sufferers, Rudolf Hoffmann, of Munich, was the first to use injections of alcohol into the superior laryngeal nerve. His aim was to produce analgesia of long duration.

The place where the superior pharyngeal nerve penetrates the membrana thyrohyoidea can be felt with the finger from the outside. If the patient be placed on his back and the larynx pushed toward the affected side the most painful spot can be determined with the finger. Here the needle puncture is made in a direct vertical line to the body, a little more toward the outer side. The needle is inserted to a depth of about 1½ Cm., meanwhile feeling for the place where the patient complains of the greatest pain, and here the alcohol is injected. Hoffmann recommends 85 per cent. alcohol, and of a temperature of 45° C., equal to about 112° F. The same proportion has been used by me. After the subsidence of the initial pain, which is sometimes quite severe, another injection is immediately made. Hoffmann advises a strong and somewhat blunt needle, which is preferable, as it avoids the blood vessels and is less liable to break. It is well to tell the patient neither to swallow nor to talk until the procedure has been completed. If one succeeds in striking the external branch of the superior laryngeal nerve, one will obtain immediate amelioration of pain in many instances, the patient being able to swallow solid food and to drink water.

The treatment and supervision of laryngeal tuberculosis in private practice is often difficult and sometimes impossible. Yet in milder cases a good deal can be accomplished. The first thing is to make the patient's home as sanitary as possible, a task often difficult to fulfill. The second consideration is to relieve dysphagia and cough by any of the advocated means, which is at the disposal of the practitioner, and if successful, he ought to be able to cure certainly 50 per cent. of patients afflicted with tuberculosis of the larynx in any stage.

If dysphagia cannot then be overcome the lack of proper nutrition will soon be evident and the patient will succumb to the disease. But before this critical event, all the means at one's disposal should be tried, one after the other. Optimism is nowhere so much indicated as in the therapy of tuberculosis, for it greatly assists the physician as well as the patient.

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THE INTRAMENINGEAL TREATMENT OF TABES AND CEREBROSPINAL SYPHILIS *

By Thomas R. Boggs, M.D., and R. R. Snowden, M.D., of Baltimore

The treatment of syphilis of the central nervous system has always been unsatisfactory. The cerebrospinal system is a closed one, and the diffusion of drugs from the circulating blood into the cerebrospinal fluid is slow and incomplete. For this reason organisms which have invaded the nervous tissue or meninges remain more or less protected from the drugs which may be present in the vascular system. For a number of years the desirability of the direct application of antisyphilitic drugs has been recognized. Horsley[1] went so far as to advocate the "heroic" treatment of opening into the subdural space and wash-

* Archives of Int. Med., June 15, 1914. From Med. Clinic of City Hospital at Bay View.

ing out with mercuric chloride (1:1,000) solution, but this procedure proved too irritating.

With the advent of salvarsan and neosalvarsan, hope was entertained that this therapeutic agent could be injected intraspinally; but investigation showed that it also damaged the tissues. Wechselmann[2] found that small amounts (1 Mg.) when injected into the brains of dogs and rabbits at a concentration of 1:500 and 1:1,000 produced convulsions, weakness of the limbs and death in from two to fourteen days; but small doses, from 0.5 to 0.25 Mg., in greater dilution (from 1:2,000 to 1:4,000) caused no reaction. Later he reported[3] the intraspinous injection of neosalvarsan in four patients without reaction, giving each from 0.5 Mg. to 3 Mg. Marinesco[4] reports thirteen cases in which neosalvarsan was given intraspinally, the dose averaging about 5 Mg. In two patients no reaction occurred, but in the remainder the reaction was severe; thus, eight patients developed incontinence of urine or retention, three showed weakness of the extremities and in one case anesthesia of the rectum, legs and buttocks occurred. Ellis and Swift[5] have carefully studied the effects of the intraspinous injection of salvarsan and neosalvarsan in monkeys. They injected small quantities and considered the cell-count as an indication of reaction due to irritation. They found that the intraspinal injection of even minute quantities (0.2 Mg.) produced profound cellular reactions which persisted over ten days, while 3.2 Mg. caused, in one monkey, paralysis of the hind legs, which lasted several months. The injections of neosalvarsan were, on the whole, less severe, but still gave evidence of irritation in doses as small as 0.045 Mg. Repeating the injection seemed to increase these effects.

The study of the effects of the intravenous or intramuscular injection of salvarsan brought to light a very important fact. Plaut[6] showed that the serum of patients who have received salvarsan exerts a definite antsyphilitic effect, whereas normal serum has no such activity, and the serum of patients treated with iodides and mercury has very little such power. Meirowsky and Hartman[7] and Gibbs and Calthrop[8] treated cases of syphilis with good results by injecting subcutaneously serum taken from other patients who had received salvarsan. In the same way Henry Alsten[9] successfully treated several cases of frambesia. Ellis and Swift[10] took up the study of this serum and showed that, when taken from the patient within six hours after the salvarsan injection, it inhibits the growth of the *Treponema pallidum*, but if taken before treatment, or from six to twenty-four hours after treatment, there is no inhibition. They also reported beneficial effects from the intraspinal injection of this serum, with very few irritative phenomena.

This spirochetacidal activity of salvarsanized serum was further studied by Gonder,[11] Castelli,[12] and Ellis and Swift,[13] who showed by the use of animals that it had a marked effect on the virulence of several spirochetes, and that this effect was demonstrable only by the injection into animals of the organisms so treated. Thus, Swift and Ellis[13] showed that the serum of rabbits treated intravenously with salvarsan, and the serum of patients treated likewise with salvarsan or neosalvarsan exerted an inhibitory effect on the *Spirochaeta duttoni;* and that these spirochetes did not appear objectively (dark field) changed, but they would not cause infection in animals into which they were injected. These investigators also found that heating the serum at 56° C. (132.8° F.) for half an hour markedly increased the activity of the serum, and that this increase is due only in part to the destruction of some inhibiting substance. They also showed that the cerebrospinal fluid does not possess these inhibitory bodies.

The intraspinal injection of serum, taken an hour after the intravenous administration of salvarsan, was first employed by Swift and Ellis as a method of treating cerebrospinal syphilis. Their technic[14] was, in brief, the following: One hour after the intravenous injection of salvarsan 40 Cc. of blood are withdrawn directly into a bottle-shaped centrifuge tube, and allowed to coagulate, after which it is centrifugalized. The following day 12 Cc. of this serum are pipetted off and diluted with 18 Cc. of normal saline solution. This 40 per cent. solution is then heated at 56° C. for half an hour. By lumbar puncture the cerebrospinal fluid is withdrawn until the pressure is reduced to 30 Mm. (water), after which enough of the serum solution is run in by gravity exactly to replace the cerebrospinal fluid withdrawn.

During the past year and a half the cases of cerebrospinal syphilis in the City Hospital at Bay View have been treated along the lines laid down by Ellis and Swift, with one important change—we injected undiluted serum in large quantities (25-35 Cc.). Thus, there was given, in many instances, twice as much actual serum at a single injection as was given by Ellis and Swift. The technic was the

following: Salvarsan, 0.6 Gm., was given intravenously, having been made up in water distilled within an hour of time of using, and the solution was injected at once. One hour later from 75 to 100 Cc. of blood were withdrawn into a large, sterile tube and was set aside to clot. After from one to eighteen hours the serum was pipetted off and centrifugalized at high speed for fifteen minutes in order to throw down any red blood-corpuscles present. The serum was then heated in a water-bath at 56° C. for half an hour and the intraspinal injection made at once. A lumbar puncture was done and the spinal fluid was slowly and carefully drained off into a graduated sterile cylinder. Not more than 35 Cc. were removed. The serum was then injected, a syringe and two-way stop-cock being used, the serum being drawn back into the syringe from the flask and then slowly injected through the needle. Great care was taken not to use any undue pressure in running in the serum. Enough was injected to replace exactly the amount of spinal fluid removed, whether this was only a few cubic centimeters or as much as 35 Cc. After the injection all pillows were removed, the foot of the bed elevated and the patient kept on his back in this position for at least an hour. The treatments were repeated at intervals of seven to twenty days, when possible, depending in part on the way in which the patient reacted.

The brief protocols of eight unselected cases are appended as illustrative of the method, with note of some of the difficulties and dangers, and the results achieved. Some cases are still under treatment at the time of this report.

Case 1.—Unmarried, colored laundress. Age, 37. Admitted suffering from tertiary syphilis with cerebrospinal infection and syphilitic cerebral thrombosis.

History.—Primary infection occurred 20 years before onset of present illness. No secondaries showed, but tertiary lesions appeared during the past 5 years. The patient had had slight, irregular mercurial treatment during past 5 years. Severe frontal headaches had existed for a week before admission, with the development of flaccid, left-side paralysis, which came on suddenly 18 hours before admission with no loss of consciousness or convulsions.

Examination.—Complete left-side paralysis, which included the muscles of the face, arm and leg, with moderately exaggerated deep reflexes and positive Babinski's sign. Neck stiff and retracted. Several large, luetic ulcerations over lower abdomen.

Treatment and Result.—After admission, patient was given three injections of salvarsan and two intraspinal injections. In the first treatment blood was withdrawn 72 hours after the injection, and in the second 24 hours after injection. When discharged the patient was normal physically except for a slight residual paralysis of the flexors of the left forearm and a left pes equinus. On admission the cerebrospinal fluid showed 20 cells per C.mm.; when discharged there were 7 cells per C.mm. Wassermann, positive on admission, negative when patient was discharged.

Case 2.—A married, white, window-washer. Age, 44 years. Admitted ill with tabes dorsalis.

History.—Primary infection had occurred 20 years before admission. The present illness began 5 years before admission with sharp, shooting pains in the legs. Extreme ataxia had developed in past two years. The patient had had six weeks' treatment in a German army hospital at the time of primary chancre. About two months later he was given another short course of iodides and mercury.

Examination.—No sphincter disturbances. Argyll Robertson pupils, knee-jerks absent, muscle sense in legs much impaired, marked ataxia, causing great difficulty in walking.

Treatment and Result.—Two intravenous injections of salvarsan and two intraspinal injections were given with consequent improvement. On admission patient was very ataxic and suffering severely with lightning pains. After second treatment the lightning pains had ceased entirely and he could walk much better. He felt so much improved that he refused to remain for further treatments.

Case 3.—An unmarried white man, a clerk. Age, 37 years. On admission was found to be afflicted with tabes dorsalis.

History.—The primary infection had occurred 9 years prior to admission and 7 years before onset of present illness, which was accompanied with lightning pains, gradually increasing unsteadiness in walking and dimness of vision. Bladder symptoms developed about a year after onset. At the time of the primary chancre the patient had local treatment and took pills by mouth for one month; during the past 18 months, mercury and iodides continuously. One year ago he was given an intramuscular injection of salvarsan, and a second three months later.

Examination.—Argyll Robertson pupils. General enlargement of lymph-nodes. Knee-jerks absent, muscle sense completely absent in the legs, moderate dulling of tactile and pain sense. Romberg sign markedly positive. Positive Wassermann in blood-serum and spinal fluid and ten cells per C.mm. in spinal fluid.

Treatment and Result.—Four intravenous injections of salvarsan, 3 of neosalvarsan, and 6 intraspinal injections were given. Total: Salvarsan 2.7 Gm., serum 116 Cc.; time, 79 days. On admission was unable to walk on account of the ataxia. At present he walks fairly well without assistance. He is now free from the lightning pains. The cells in the spinal fluid dropped from 10 to 6 per C.mm., and Wassermann reaction has changed from complete fixation to a very faint fixation. The reactions were very severe, prostrating the patient, and for this reason the treatments were discontinued.

Case 4.—An unmarried, white, salesman. Age, 37 years. Was admitted with cerebrospinal syphilis and syphilitic lateral sclerosis.

History.—The primary infection was incurred 15 years before onset of present illness 2½ years ago, when unsteadiness in walking developed, soon followed by weakness and stiffness of the legs. Paresthesias, numbness, girdle sensations and bladder symptoms developed within 18 months. The patient has had several short mercurial courses by mouth and by inunction.

Examination.—General enlargement of lymph-nodes. Pupils unequal, but react normally.

Knee-jerks greatly exaggerated on both sides; ankle-clonus present and Babinski sign positive. Legs stiff and spastic and held in adduction. Patient walks with difficulty. Wassermann on blood-serum, 60% fixation. Positive Wassermann and 25 cells per C.mm. in cerebrospinal fluid.

Treatment and Result.—Two intravenous injections of neosalvarsan, 6 of salvarsan and 8 intraspinal injections were given; total: Salvarsan, 3.9 Gm., serum, 178 Cc.; time, 195 days (two admissions). On admission patient was so spastic as to be unable to stand on his feet, and he was suffering severely with girdle sensations. These disappeared immediately and the spasticity became distinctly less marked until he can now walk without assistance, and can go up and down stairs. In the spinal fluid the cells have fallen from 25 to 5 per C.mm., and the Wassermann from complete fixation to very faint fixation.

Case 5.—A married, white man, blacksmith. Age, 45 years. Was admitted with tabes dorsalis, partial optic atrophy and tertiary syphilis.

History.—Primary infection appeared as a chancre 22 years before admission. Present illness began 4 years before admission with dimness of vision, soon followed by lightning pains which have gradually become more and more intense. Unsteadiness in gait has developed during the past 2 years; no sphincter disturbances. At the time the chancre appeared a few local applications of calomel powder were made; no medicine was given internally. During the past 4 years the patient has had more or less continuous treatment with mercury and iodides.

Examination.—Moderate enlargement of lymph-nodes. Argyll Robertson pupils and primary optic atrophy. Knee-jerks absent; moderate ataxia of legs. Positive Wassermann and 35 cells per C.mm. in spinal fluid. Wassermann in blood-serum negative.

Treatment and Result.—Eight intravenous injections of salvarsan and 8 intraspinal injections were given; total: Salvarsan, 4 Gm.; serum, 204 Cc.; time, 108 days. This patient had been unable to work for 6 months on account of the severe lightning pains. After the first treatment he was entirely free from pains except for one mild attack. The cell-count in the spinal fluid fell from 35 to 5 per C.mm., and the Wassermann from positive to negative.

Case 6.—A white man, bookkeeper, widower. Age, 54 years. Was admitted suffering from tabes dorsalis.

History.—Primary infection occurred 24 years prior to admission. Initial lesion was not known, possibly a chancre. Two years before admission the patient had an acute retention of urine, and examination at that time showed inactive pupils, knee-jerks faint, bladder atonic and anesthetic, and a positive Wassermann in spinal fluid. Eighteen months ago he began to suffer with severe pains in the back, coming on in paroxysms about every half hour, worse at night. A hemiplegia, 3 years ago has cleared up almost completely, the right side having been involved. The patient has had several short courses of iodides and mercury by mouth during the past 2 years.

Examination.—Argyll Robertson pupils. Unilateral sweating involving the whole left side of the head and neck. Slight residual weakness and exaggeration of reflexes of right arm and leg. Knee-jerk almost absent on left. Wassermann in blood-serum negative. Positive Wassermann and 62 cells per C.mm. in spinal fluid.

Treatment and Result.—Two intravenous injections of neosalvarsan, 7 of salvarsan and 9 intraspinal injections were given. Total: 3.9 Gm., serum, 186 Cc.; time, 77 days. When admitted the patient was almost prostrated on account of the severe and constant pain in the back. This steadily became less intense and the patient was quite comfortable when discharged. The cells in the spinal fluid fell from 62 to 4 per C.mm. and the Wassermann changed from positive to negative.

Case 7.—An unmarried, colored man, a cook. Age, 45 years. Was admitted under diagnosis of tabes dorsalis with optic atrophy.

History.—The primary infection had occurred 27 years before onset of present illness, which began 5 years before admission, with unsteadiness and weakness of the legs; the subsequent history is typical. There has been incontinence of urine for 3 years. Lightning pains have been constant but not severe. Numerous gastric and laryngeal crises have occurred during the past year. The patient has had failing vision for 18 months. For the past year the ataxia has been so severe that he has been practically helpless. The patient had a short course of local treatment at time of chancre; mercury and iodides by mouth during past year.

Examination.—Patient greatly emaciated. Complete loss of muscle sense in the arms and legs with exaggerated ataxia of the muscles of the face, arms and legs. Argyll Robertson pupils. Deep reflexes of arms and legs absent. Wassermann in blood-serum negative. Positive Wassermann and 36 cells per C.mm. in spinal fluid.

Treatment and Result.—Three intravenous injections of salvarsan and 2 intraspinal injections were given. Total: Salvarsan, 1.2 Gm.; serum, 35 Cc.; time, 36 days. Patient suffered an extreme reaction after the second intraspinal injection which was characterized by severe respiratory depression. Immediately after the injection, at 4 p. m., it was noticed that he seemed slightly dazed and did not answer questions so quickly as usual, although he was perfectly rational. Twenty minutes later the mouth began to twitch and pull to the right, the eyes turned to the right, and the right arm and leg began to jerk slightly. The respirations suddenly dropped to 4 a minute, and were very irregular, the sequence usually being 2 or 3 spasmodic respirations followed by a long period of apnea, sometimes lasting ¾ of a minute. The jerking and twitching soon ceased and the patient became quite flaccid. At 6 p. m. it became necessary to give artificial respiration for about ½ an hour. A lumbar puncture was done at 7 p. m., and 10 Cc. of the spinal fluid, tinged with the serum, were allowed to drop out. At 8 p. m. another puncture was done and the spinal canal washed out 3 times with normal saline. It was noticed that the intraspinal pressure varied with the respirations in the normal manner, and there was no noticeable change in the condition of the patient when the canal was drained or filled with 35 Cc. of normal saline. The condition remained about the same until 1 a. m., when he suddenly sat up in bed, recognized those about him and talked rationally. In about 15 minutes he again suddenly sank into apparent coma, with spasmodic and irregular respirations, 4 or 5 to the minute, and remained thus until 4 a. m., when, as before, he suddenly recovered, was perfectly rational and showed no signs of weakness. When questioned the patient asserted he was entirely conscious at all times and told with a fair degree of accuracy what was done and who was in the

room. He suffered no pain, but simply could not breathe, although he felt a great desire to do so. The next day he was as well as usual. No more treatments were given and he left the hospital in a week, unimproved.

Case 8.—An unmarried, white man, a painter. Age, 47 years. Was admitted suffering from cerebrospinal syphilis.

History.—The primary infection occurred 26 years before admission. The patient was admitted on account of acute alcoholism. When examined the eyes showed Argyll Robertson pupils. For the past year he has suffered with pains in the back and giddiness. The patient had a short course of local treatment at time of chancre.

Examination.—Reflexes all normal, knee-jerks active. Wassermann on blood-serum negative. Faintly positive Wassermann and 54 cells per C.mm. in spinal fluid.

Treatment and Result.—Four intravenous injections of salvarsan and 4 intraspinal injections were given. Total: Salvarsan, 2.4 Gm.; serum, 118 Cc.; time, 36 days. The cells in the spinal fluid dropped from 53 to 10 per C.mm.; the Wassermann remained positive. The patient felt perfectly well and could not be induced to remain longer in the hospital.

From the foregoing cases it is evident that the intraspinal method is a step forward in the treatment of tabes and cerebrospinal syphilis. The patients were uniformly relieved from pain, and as far as locomotion is concerned there was a slow but definite improvement, in some instances amounting almost to restitution to normal. It is in this respect that our cases seemed to do better than those of Swift and Ellis, perhaps on account of the larger doses of serum.

The psychic effect of the treatment is also marked. The patients became encouraged by the quick relief of pain and the first improvements in the control of motion and were faithful in their efforts to use the legs and practice walking, stair climbing, etc. The nutrition also rapidly improved under these stimuli. In fact, this very improvement was a hindrance in our series, for with the class of people under our care it was in most instances impossible to keep them in the hospital long enough to carry the treatment as far as we should have liked to do.

The effect of the treatment on the cerebrospinal fluid was very striking. The cell-count first fell to normal, the Wassermann reaction becoming negative some time after the cells were reduced. It has seemed from our observations that the Noguchi reaction was of little value during the carrying out of this treatment, since such large amounts of globulin were injected into the spinal canal. At any rate, the Noguchi reactions were positive, in most instances, after the cell-count and Wassermann indicated a normal fluid.

Where the patients are intelligent enough to appreciate the necessity for repetition of the treatment until the biologic indices of normal are maintained, there need be but transient interruptions of regular occupation, lasting forty-eight to seventy-two hours as a rule. It is also true that while the risks are minimal, they do exist and in all probability very feeble, advanced tabetics or very acute cases of cerebrospinal lues should not be treated in this way.[15]

In those of our cases which were treated with the undiluted serum the reactions were sometimes more severe than those reported by Swift and Ellis—pain in the abdomen, legs and rectum, with occasional nausea and vomiting or dizziness, and in a few instances a little fever. We do not feel, however, that these constitute any contra-indication to the larger doses of whole serum, especially in the light of the apparently greater benefit to the patient. The reactions produced by the injection of the salvarsanized serum from another patient were very severe, as shown by two of our cases, the donors of the serum receiving an equal quantity of the same lot, at the same time and in the same way, having no reaction at all.

It is quite evident that so indirect a method of applying arsenic in the treatment of syphilis of the central nervous system cannot be considered as final; but we believe it is an advance on what has gone before and a spur to the findings of new preparations or new methods more suitable for the accomplishment of the desired results.

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[15] One of us has treated by this method a tabetic with diabetes mellitus. The patient was told of the risk, but wanted to take any chance. He had had five previous intravenous treatments with salvarsan. Eighteen hours after the injection of 20 Cc. of salvarsanized serum he developed diabetic coma and was very ill for five days, when a large intravenous transfusion of sodium carbonate and glucose turned the scale and he recovered from the coma. He was not benefited by the treatment except in the disappearance of the lightning pains.

THE TREATMENT OF SCARLET FEVER*

By William C. Calhoun, M.D., of New York

My first principle on assuming the care of a scarlet fever patient is to consider the disease one of the most dangerous of the infectious diseases, because of its frequent insidious damage to the hidden organs, especially the kidneys. Another rule is to call the condition scarlet fever and not scarlatina, no matter how apparently mild the infection may be, because of the tendency of the laity, not necessarily of the unintelligent class, to assume from the term, scarlatina, a mild disease and one that may be lightly regarded. An early report of the case to the department of health, and immediate isolation of the patient, are essential for the prompt limitation of contagion.

The patient should be put to bed immediately in a room as isolated from those of the rest of the household as possible, with the desired ventilation, light, and quiet. Procure a competent nurse; if this is not possible, have one person among the family of friends elected to care for the patient. His food utensils should be kept separate and cleansed very thoroughly. The bed linen from the sick room and clothing from the patient should be boiled after having been immersed in a one to 2,000 bichloride solution for one hour. No visitors should be allowed in the sick room, and a strict quarantine must be directed, not only to the children, but to the adult members of the household as well.

At the outset a very complete physical examination of the patient should be made, special attention being directed to the ears, nose, throat, and heart, and daily examinations of the throat and chest should be made until convalescence is established. If anything at all resembling a membrane is discovered in the throat, or a marked nasal discharge, possibly bloody, is present, a culture should at once be made for possible diphtheria. A specimen of urine should be promptly obtained and examined for albumin and casts. A complete uranalysis is best. The urine should be measured daily as to quantity in the twenty-four hours, and qualitatively every second day. In all cases, whether mild, severe, or malignant, watch the kidney action, and attempt to increase the urine when scanty, whether the condition is considered to be one of acute hyperemia or an actual kidney inflammation. It is usually after the subsidence of the acute symptoms that signs of edema denoting kidney damage show themselves, and indeed long after convalescence is over and the patient is apparently well again, we must keep up our watch for signs of a postscarlatinal nephritis and examine the urine at frequent intervals.

In all cases a fluid diet should be ordered, preferably milk because of its nutritive qualities, and because it is usually well borne. Should any marked idiosyncrasy to milk be present, matzoon, zoolak, or malted milk may be substituted, or oatmeal gruel may be given. Sometimes orange albumin, which is nutritious and easily digested, is very acceptable to the patient. The concentrated meat broths are contraindicated because of their highly nitrogenous character. Water should be given liberally throughout the course of the disease.

For mild cases of scarlet fever with a moderate rise of temperature and no apparent complications, I order a cleansing warm bath each morning, with sponging of the whole body once or twice a day with either tepid water alone or equal parts of water and alcohol.

My medication in these cases consists of a course of calomel at the outset, followed by a saline, and if the bowels show signs of sluggishness I give an enema every second day, omitting it on any day during which there has been a satisfactory evacuation. Occasionally during the course of the disease I order a liquorice powder or citrate of magnesia. I usually give liquor ammonii acetatis in doses of four drams every four hours for an adult, proportionately for a child, for its diuretic effect. A gargle of liquor antisepticus alkalinus properly diluted, or a simple warm salt solution used at least three times in the day, about completes the medicinal treatment.

The severe types of scarlet fever are of two kinds: Those with complications, usually a cardiac, renal, middle ear, or glandular involvement; and, second, the fulminating or malignant type where the patient is apparently from the first over-

* N. Y. Med Jour., July 4, 1914.

whelmed with the poison of the infection. The first of these severe types where complications are likely to arise I should treat as follows. At the first sign of an endocarditis an ice bag should be placed over the precordial area and the least exertion on the part of the patient must be discouraged. Signs of pericarditis should be watched for, or an involvement of pleura or lung. A severe adenitis is best treated with ice bags or cold compresses, and the nose and throat irrigated with a hot saline solution every three of four hours. Should middle ear inflammation come on, the membrana tympani must be incised at the first sign of bulging. The high temperature and delirium that usually accompany these severe cases is best combated by the cold pack or sponging. Antipyretic drugs should not be used. Of course an escape of pus from the ear will be followed usually by some cessation of the acute symptoms and a drop in temperature and pulse rate. I would continue the spirit of Mindererus throughout these severe cases for its diuretic effect. - Urinary suppression would call for counterirritation over the kidneys, or diaphoresis by means of the hot pack, or possibly some active medicament such as pilocarpine or caffeine. I do not think we are called upon very often to use stimulants in these cases. I should choose strychnine in moderate doses, and rather for its general tonic effect than for active stimulation.

In the so-called malignant cases we of necessity must make use of stimulants freely. Strychnine, in doses of at least one-thirtieth of a grain, every four hours for adults, and proportionate doses for children, and whiskey in full doses, but given well diluted. We are justified in attempting anything which may possibly aid, and I should in these extremely sick cases use a serum, such as the leucocytic serum of Hiss, or give a mixed infection vaccine.

Desquamation is usually complete about five weeks from the onset of the disease, and the quarantine should be continued strictly all this time. Sweet oil may be applied to the skin to limit the scattering of the flakes of epidermis.

The return to solid diet may be begun within two or three days after the temperature has become normal; but meat should not be taken for at least a week after convalescence has been established, and then only after a thorough test of the urine has shown the kidney function to be normal. The time for getting out of bed depends upon how severe the infection has been, but at least a week after temperature and pulse are normal is a good rule.

APOMORPHINE FOR VOMITING

M. Field, of Canby, Minn., reports a cure of a severe case of vomiting of pregnancy by the use of $\frac{1}{36}$ of a grain of apomorphine in a teaspoonful of water. He has used this in other cases of vomiting or nausea with like good results. In the minute quantities used it quiets the inflamed gastric mucosa and produces no ill effects.—Jour. A. M. A.

ACTION OF HEXAMETHYLENAMINE

The results of a study of the effects of hexamethylenamine internally administered are reported by Frank Hinman, of Balti-Baltimore. His conclusions are given as follows: "1. The conversion of hexamethylenamine into formaldehyde is a simple chemical process which will readily occur in an acid medium, but will not occur in an alkaline medium. 2. The amount of excretion of hexamethylenamine in the urine is influenced by the size of the dose, by the frequency of administration and by the character of the changes that occur in the acid contents of the stomach. 3. The amount of the subsequent conversion of this hexamethylenamine in the urine is dependent on the degree of urinary acidity, on the duration of exposure to the influence of this acidity and on the percentage concentration of the drug in it; and in order to give formaldehyde conversion in antiseptic amounts the urinary acidity should be greater than 2 Cc. of tenth-normal sodium hydroxide for 10 Cc. of urine. 4. A low acidity may be temporarily increased by feeding certain acid-producing drugs, and this increase in acidity may often be maintained by giving these drugs alternately. 5. Disease of the kidney has no influence whatsoever on the formaldehyde content in the urine. 6. At the level of the kidneys hexamethylenamine in doses of 15 grains three times a day has no antiseptic value. 7. Formaldehyde is present in the bladder urine in some amount in practically every case receiving 15 grains of hexamethylenamine by mouth three times aday, but this dosage is too small a routine from which to expect a reasonble antiseptic benefit in every case. 8. The allied hexamethylenamine compounds do not give greater antiseptic values than pure hexamethylenamine."—Jour. A. M. A., Nov. 1, 1914.

In cases of peritonitis it is desirable to employ the Fowler's position before, as well as after, operation.—Amer. Jour. Surg.

Lipoma of the cord may much resemble a hydrocele. It is, however, less translucent, and rather less cystic to the feel.—Amer. Jour. Surg.

Progress in Materia Medica and Therapeutics

CHARCOAL IN INTERNAL DISEASES

At the Congress of Internal Medicine at Wiesbaden, the report of Wielchowski and Adler on charcoal in internal conditions was worthy of interest. The experiments of Wielchowski showed that if certain forms of charcoal are administered simultaneously with poisons, the latter become inert. He considers a marked delay in absorption as the cause of this antipoisonous action. If a bolus methylene blue combination is taken, the urine becomes blue, but if a combination of animal charcoal and methylene blue be given, methylene blue is not set free in the system and the urine retains its normal color. O. Adler tried out charcoal systematically in various intestinal conditions and cases of poisoning. All of the latter (including phosphorus, sublimate and morphine poisoning) recovered. Enteritis and gastritis, with no anatomical change, were favorably influenced. Hyperacidity and intestinal processes, due to bacteria, also seemed to improve. A saline cathartic should be given after the charcoal.—Therap. der Gegenwart, 1914, No. 5.

SILVER NITRATE SOLUTION IN WHOOPING COUGH

Watson, in the middle of the last century, suggested the use of local applications of a strong solution of silver nitrate, and, recently, Occhenius, without knowing of the suggestion of Watson, published an article concerning the use of a 2 per cent. solution of silver nitrate applied systematically to the pharynx. This was done because he thought that the infection was chiefly in the upper portion of the respiratory tract, and also because its astringent action diminished the secretion of mucus, and he believed that this would have reduced the number of attacks of the cough.

Occhenius tried this method of treatment on 107 children varying in age from several months to thirteen years, and, in eighty-four cases, he believed he obtained very good results. Sometimes the effect was remarkable. In one child, aged one and a half years, who had had a severe whooping cough with as many as sixty-five spasmodic attacks in twenty-four hours, the applications brought about a disappearance of all the symptoms in less than three weeks. Generally, by the end of eight days after the treatment has begun, there is a marked diminution, not only in the number, but in the intensity of the coughs. In nervous children, and in the older ones, it is possible that suggestion played a certain part in the good effects obtained. This was not applied to the younger infants. In infants the strength of the solution was 1 per cent., repeated daily. The child was held firmly and the pharynx thoroughly painted with the solution by means of a probe covered with cotton. In the older children, these applications were made every two days for two weeks. Sometimes after the first application there would be, on the following day, an increase in the number of attacks, but, later on, there was a marked lessening. In addition to the use of the silver solution, a very weak solution of hydrogen peroxide was used to spray out the nose and throat. —Progressive Medicine, xvi, No. 1.

METHYLENE BLUE SILVER IN BUBOES

Saphier and von Zumbusch report their experiences with methylene blue silver in 124 cases of suppurative inguinal adenitis.

The results were as follows: 10 per cent. of the cases were cured in two days, that is, at the first change of dressing the point of puncture was closed, no signs of inflammation persisted and no pus or serum could be obtained either by suction or pressure. In 20 per cent. it took three to five days, in 30 per cent. six to eight days and in 35 per cent about two weeks to eradicate the buboes. In 5 per cent. of the cases the virulent type of bubo developed, the prognosis in these cases having been bad from the outset, but even here a more beneficial effect was noted than in patients treated with the usual methods. The time required to terminate the process was not in accordance with the size of the inguinal swelling. Very small buboes occasionally were virulent, while very large ones, at times already discharging pus, frequently healed with astonishing rapidity.

The following technique was employed: The diseased area was shaved, cleansed with benzine and disinfected twice with tincture of iodine. A puncture was made in the middle of the suppurating gland very quickly with a narrow scalpel, no anesthesia being employed. The pus was removed with a Bier suction cup and by gentle pressure along the edges of the bubo.

The cavity was then filled with methylene blue silver solution by means of a 10 Cc. syringe with an asbestos piston. A moist dressing was then applied and not removed for forty-eight hours. Whether ½ per cent., 1 per cent., 2 per cent. or 5 per cent. solutions were used made no apparent difference. The remedy produced absolutely no pain. If at the first change of dressing, it was possible to express serum, the injection of methylene blue silver was repeated twice or three times at intervals of two or three days, while the absorption of infiltrations was hastened by the local application of moist heat. Control treatment was carried out chiefly in cases having buboes on both sides. One per cent. silver nitrate, 5 or 10 per cent. protargol, 1 per cent. sodium chloride and sterile water were used. Of these sterile water showed the greatest efficiency, but it could not equal the results, occasioned by methylene blue silver.

From their investigations the authors conclude that in the treatment of suppurating inguinal adenitis, the best results by far are obtained with methylene blue silver.—Deutsche med. Woch., No. 48, 1913.

CONCERNING DIOGENAL

Küster reports the results of his investigation regarding diogenal as a sedative, carried out in the female wards of the Goddelau institution for the insane.

The preparation was used in the following doses. 0.5 Gm. (7½ grains) was given twice a day to begin with and increased to 2.0, 3.0 or 4.0 Gm. a day as the case required. It acted in about one and a half to two hours and no undesirable by-effects were observed, except that more frequent urination and slight constipation occurred in three cases. Excellent after-effects in patients in whom the administration of diogenal could be discontinued, were not to be denied. Symptoms of poisoning even after prolonged use did not appear, nor were exanthemata produced at any time. Cumulative action did not manifest itself nor did diogenal lose its sedative power when given for a long period. Whenever it was taken for a long time, the general condition improved.

In two cases of severe mental depression, where opium and, in one case, pantopon also, had had no result, diogenal was used successfully. In two cases of paranoia favorable results could also be recorded, but in four cases of congenital idiocy the ability of diogenal to control the excitability was uncertain. Very gratifying results were obtained in dementia precox, while in senile dementia and dementia paralytica the preparation was likewise used to advantage. In a mild case of epilepsy, having scarcely any attacks, diogenal controlled excitability promptly. In epilepsy of moderate degree it reduced the number of attacks, improved the general condition and influenced favorably periods of agitation. In an extreme case a satisfactory sedative effect was obtained, but the attacks were not reduced in frequency. The almost unbearable migraine, which the last case was subject to, was apparently relieved by diogenal.

The author refers to diogenal as a "mild" veronal and indicated especially in weak and in elderly patients. 1.0 Gm. (15 grains) three time a day is the most satisfactory dose; it can usually be reduced gradually to 0.5 Gm. (7½ grains) three times a day and the same effect obtained. At the beginning less than 3.0 Gm. (45 grains) a day rarely produces any result, while some individuals require 4.0-5.0 Gm. a day.—Klinik für Psychiatrie und nervöse Krankheiten. Vol. ix, No. 1, 1914.

TREATMENT OF ULCEROMEMBRANOUS ANGINA

This disease, which was first described by Vincent, and which is generally known by his name, is very frequently overlooked. It is usually seen in individuals between two and twenty-five years of age, and is said to be more frequent in damp weather, especially in spring and fall. It is more apt to develop in individuals who have unclean mouths, or who are suffering from diseases of the mouth. Sometimes direct transmission is observed, particularly by means of drinking vessels, pipes, or pencils.

The disease usually begins as an acute stomatitis, pharyngitis, or tonsillitis, which soon shows the appearance of a false membrane closely resembling diphtheria. It is removed with difficulty and leaves a bleeding surface behind, and, as time progresses, is apt to leave more or less ulceration. As a rule, the disease is either mistaken for stomatitis or diphtheria, for syphilis or occasionally for scurvy. If the membrane is removed, it will recur after a very short time, and one attack of the disease is usually followed, months or even years later, by a second. There is generally little or no constitutional disturbance, but the patient may complain of pain in swallowing, and an examination reveals the patch of membrane. In other cases there is great pain, a fetid breath, profuse salivation, and considerable general disturbance. In these cases, there is usually involvement of the lymph nodes draining the infected area.

Sutter has made a study of fifty cases, and he calls particular attention to the fact that the disease is really more or less common and practically always overlooked, and very few of the text-books devote any attention to it. The organism is generally spoken of as the Bacillus fusiformis; it occurs in the form of spindle-shaped, or fusiform, bacillus or as a spirillum suggesting the spirillum of relapsing fever. These bacilli are from 3 to 10 microns in length, and vary considerably in size and shape, even in the same preparation. They stain very much like the diphtheria bacillus and show areas which stain and others which do not stain, giving them a striped appearance; the ends of the organism stain much better than the other portions. Löffler's methylene blue is a very suitable stain, and, unless smears are made directly from the swabs taken from the throat, the organism will escape detection.

Various methods of treatment have been suggested, but removing the pseudomembrane and swabbing with peroxide of hydrogen, either full strength or diluted half with water and then painting the surface with tincture of iodine, is perhaps the most efficient. Following this, a mouth wash of potassium chlorate is perhaps the most efficient thing which can be used. In cases in which there is very much pain in swallowing, orthoform, either in powder or in tablets, may be used.—Progressive Medicine, xvi, No. 1.

SALVARSAN IN THE ABORTIVE TREATMENT OF SYPHILIS

Erich Hoffmann, of Bonn, accepts the standpoint taken by many dermatologists, that primary syphilis can be abortively treated if a proper combination of salvarsan and mercury is brought into play.

The diagnosis of primary lesion having been established, Hoffmann gives, as he has been doing for several years, salvarsan 0.4 Gm. in 200 Cc. of 5 per cent. sodium chloride solution about every seventh day, and in addition a course of mercury, consisting of thirty-six to forty-two inunctions of 4 to 5 Gm., or fifteen injections of mercury salicylate, 0.1 Gm. In refractory cases 0.05 Gm. of calomel is injected several times as an adjuvant to the preceding. As a guide for the individual case, the Wassermann reaction is used. If it remains negative or is but faintly positive, a less strenuous treatment is carried out; if it is strongly positive for some time, an especially thorough course of treatment, perhaps with calomel added, is indicated. The Wasserman also decided the number of salvarsan infusions; usually four to six suffice, but seven or eight may be required. After the Wassermann is negative, two more doses of salvarsan should always be given. Neosalvarsan is used only if the patient becomes very sensitive to salvarsan after repeated injections. Hoffmann has had sixteen private patients under observation for from one to three and a half years. The majority received one course of combined treatment; two courses were necessary for the others, except for one to whom three courses were given. Seven of the cases have been free from symptoms two to three and a half years, four for over two and a half, and five for over one year. The provocatory salvarsan injection and examination of the spinal fluid in regard to cells, Wassermann reaction and amount of albumen, showed nothing abnormal when these cases were seen last.

From these and similar cases in hospital practice, Hoffmann concludes that with one or two courses of salvarsan and mercury, primary syphilis can be cured and that the cure is in all probability a permanent one. His conclusion is based on the following facts. Gennerich, Scholz and Hoffmann himself, have noted repeatedly that if primary syphilis is not aborted in this way, recurrence can be observed either clinically or serologically within a year. As his patients have been in part under observation for three and a half years, it is natural to suppose that some of them, at any rate, would have shown some luetic manifestation, if the disease had not been eradicated. The scar of the primary lesion was excised at the end of the treatment in several of his cases, and was found to be negative as regards spirochaetae and inert when implanted in a rabbit's testicle, though histological examination still revealed perivascular infiltration with lymphocytes and some plasma cells, as well as some changes in the blood and lymph vessels. Furthermore, some of his patients married, did not infect their wives and had healthy children.

An important question, which future investigation must decide, is whether one or two courses of treatment are essential for a cure. It is safer to carry out the second course after a short interval, although the author's experiences would tend to show that one course is sufficient. These remarks refer to primary syphilis. Many authors, including Gennerich consider it dangerous in early secondary syphilis, to allow longer intervals to elapse between the treatments, as meningeal complications may arise. In Hoffmann's cases of secondary syphilis, he achieved good results even

when quite some time intervened between treatments. One of his patients, in whom a clinical recurrence was found twice, after five and six months respectively, following a third course of treatment has been free from symptoms for a year and a quarter, and a provocatory salvarsan injection and a test of the spinal fluid resulted negatively.—Deutsche med. Woch., No. 23, 1914.

PITUITRIN IN ASTHMA

The effect of adrenalin on asthmatic attacks is well known and it seemed interesting to L. Boechardt to try the effect of pituitary extract, which is similar in its physiological effects. It was found that a good preparation of pituitary extract quite regularly cut short the attack in doses of 1 Cc. and also in most cases prevented a recurrence. The effect is different from that of adrenaline in that it is more lasting. Evil effects were not seen except in children, where there may be slight syncope.—Therap. d. Gegenwart, Dec., 1913.

SALVARSAN IN NERVOUS SYPHILIS

C. B. Craig and J. Collins, of New York, give the results of their study of the use of salvarsan and neosalvarsan in nervous diseases due to syphilis. They do not wish to give the impression, that it is effective when serious damage has been done to the nervous tissues, but they recognize the fact that it is a potent agent for good in acute and recent cases. Salvarsan has been used at the Neurological Institute, New York, since 1910, and during the past twelve months they have had a growing conviction that neosalvarsan is not so potent as salvarsan. Trophic disease, such as the Charcot joint, have not yielded especially to salvarsan, and they have also had meager success in specific endarteritis. In tabes, the cases fall into two classes, first, those of long standing with a general negative Wassermann in which the tissues have become tolerant to the chronic intoxication. The results here have been slight and the patients very little improved. In the more recent cases with vigorous salvarsan treatment administered to render the Wasserman negative and to reduce the number of cells to zero, better results have been obtained. This does not mean giving two or three injections; it may take five or even twenty or more and they are now using it in full doses every five to seven days for a greater or less period, being guided chiefly by the state of the spinal fluid, especially as regards the cell content. Cases are reported of both these classes. There is a small percentage of cases with persistent Wassermann in the serum, even when the patient cooperates thoroughly in the treatment, and such a one is reported. It has been asserted that optic nerve atrophy followed the use of salvarsan but their opinion is, that it anteceded the treatment, though perhaps not apparent. They have seen an incipient optic atrophy progress steadily to complete atrophy while under the most vigorous treatment. A table is given showing the striking effect of salvarsan on the Wassermann reaction, globulin content and cell-count in the cerebrospinal fluid in tabes. Passing to diseases of the motor tract, while the results of treatment are usually less fortunate, there is a sufficient number of recoveries to justify pushing it at least to the extent of rendering the reaction negative. The rapidity in which the ordinary types of cerebrospinal syphilis, including meningoencephalitis and meningomyelitis, is very gratifying, and like results could not be accomplished for months, if at all, with the mercurial treatment. The authors say that gummas of the brain or cord are rarer than was formerly supposed. Many cases thus classed have been shown by laboratory and therapeutic methods to be due to a very pronounced cellular exudate of encephalitis or myelitis. Their experiences with this class of cases, therefore, has not been sufficient to justify conclusions. There is another class in which the patients show no gross lesion of the nervous system, but complain of vague inconstant neurasthenic symptoms, and even if there is no knowledge of infection the therapeutic test is promptly curative. They say that we have yet to appreciate fully the ultimate effects of syphilis on the offspring, and it is doubtless the cause of many backward children. They had a number of such children under treatment, but they do not think their experience extensive enough to draw conclusions as to its value. General paresis is a disease that is not encouraging, but there is hope that the method of subdural salvarsan therapy of Swift and Ellis may have some success. A case is reported in which the deteriorating process seems to have been arrested. The authors offer the following conclusions: "1. The treatment of syphilitic nervous diseases without the Wassermann reaction and spinal fluid analysis is guesswork. 2. The nervous system may be the site of attack within a few weeks after the initial lesion appears. 3. The earlier antisyphilitic treatment is instituted in syphilitic nervous diseases,

the greater the probability of complete recovery. 4. Salvarsan is the most potent remedy in our armamentarium in the treatment of syphilis of the nervous system. 5. Salvarsan is not all-sufficient. 6. One or two doses are not usually sufficient to effect a cure, but may check the disease for a time. 7. Syphilitic nervous diseases improve most when salvarsan therapy is combined with mercurial treatment and general tonic measures. 8. Therapy should be continued until the serology is negative if possible. 9. The serology should be examined periodically after a negative status has been achieved."—Jour. A. M. A., June 20, 1914.

FIBROLYSIN IN AURICULAR VERTIGO

As the older remedies like quinine, sodium salicylate, potassium iodide, iodine vapors, hydrobromic acid and even lumbar puncture have proven rather unreliable in Ménière's disease and are apt to have injurious effects in the auditory function, fibrolysin and thiosinamine have recently been used in this condition, because they have been shown to be of value in processes, in which the abnormal formation of sclerotic or scar tissue is the etiological factor.

Soca of Montevideo treated eighteen cases of Ménière's disease without a failure. He usually injected one ampule of fibrolysin (2.3 Cc.) a day for ten successive days. After an interval of ten days another series of injections was carried out. Often one injection every second day produced the same effect as the daily administration. In fact, except in the more pronounced cases, one ampule twice a week was adequate. Daily injections were never injurious in Soca's cases and he did not observe by-effects, such as were occasionally seen by another author. The excellent results, Soca succeeded in obtaining, are especially noteworthy, because six of his cases were of many years' standing and had not reacted to lumbar puncture nor to quinine treatment. Usually the beneficial effect became manifest quickly, sometimes it was slow in appearing. In one instance three series of ten injections were necessary before normal conditions were restored. In general, the good results were permanent. The few recurrences, which did take place, were readily relieved by a repetition of the treatment.

The question, which these observations brings up, is whether the success of this treatment is due to histolysis, a softening and loosening of the adhesions or whether we are dealing with an influence, more extensive in character. The almost immediate effect, noted in some cases, the favorable termination of a case of leukemic vertigo without sclerosis and the systemic reaction, observed by some authors and attributed to anaphylaxis, all tend to suggest that fibrolysin influences the organism as a whole. This influence is noticeable and in general is of benefit, but makes careful observation necessary.—Bul. de la Soc. méd. des. Hôpitaux, 1913, No. 35.

BOLUS ALBA IN THE TREATMENT OF CHOLERA

In 1906, Julius Stumpf, of Würzburg, published his first monograph on the use of bolus alba in cholera asiatica and infectious gastro-enteritis, after he had successfully treated nine cases of cholera in 1905. Since then others have used the remedy in enteric processes, such as poisoning with meat and fish and dysentery, with such constant success that its ability to cope with cholera appeared self-evident.

In September, 1913, Stumpf had occasion to treat numerous cases of asiatic cholera in Servia. He had volunteered his services and took with him 300 packages, each containing 200 Gm. of sterilized bolus alba. Equal parts of bolus and water were stirred up and the patients were made to drink the mixture frequently and abundantly. In Nisch thirty-one cases were treated with but one death. The fatal termination occurred in a young Servian, who was moribund when first seen and to whom only a few teaspoonfuls of the bolus mixture could be administered. The others, including a case of cholera sicca and several of cholera typhoid, all recovered. In Belgrade he dealt personally with twenty cases, in which the diagnosis cholera had been made bacteriologically. Three were in the last stages with edema of the lungs; the remaining seventeen promptly improved and nineteen days later the bacteriological examination was negative.

Stumpf considers his experiences in Servia of extreme importance for the future treatment of cholera, inasmuch as he was enabled to ascertain why the bolus alba therapy, undertaken by others, had not always been crowned with success. Anyone wishing to have satisfactory results with the remedy must remember that kaolin is a perfectly innocuous substance and that the intestinal tract must be flooded with the mixture of bolus alba and water in the shortest possible time, no matter at what inconvenience to the patient. The author reasons that as soon as a quantity of bolus alba has been administered, sufficient to coat the intestinal mucous mem-

brane, whence the toxins reach the vital organs, the patient has practically recovered, as marked changes in the organs are hardly possible in a process of such short duration, and even if they had begun, they would be so slight that prompt repair would follow. Stumpf also concludes that the constantly recurring vomiting has absolutely no serious consequence and must not deter the administration of the remedy. In spite of the retching and discomfort of the patient, the physician must keep one goal only in view, namely, that a sufficient amount of the mixture is ingested. The frequent vomiting, by the way, tends to force small quantities from the stomach into the intestine.

The author has, furthermore, applied the bolus alba treatment in several hundred cases of intestinal catarrh to the exclusion of other remedies, and found that it never failed him. He acknowledges that in some of these cases certain drugs would have accomplished as much as kaolin, but the harmless nature of the latter makes its use to its fullest extent practical in all cases, even if no definite indication exists.

From this it follows that measures should be taken to make the remedy available for immediate use in all localities where cholera is likely to occur.—Münch. med. Woch., No. 14, 1914.

BENZOL IN LEUKEMIA

L. A. Levinson, of Toledo, O., in an article on the use of benzol in leukemia, draws the following conclusions:

1. Benzol is a symptomatic remedy of great value in leukemia.
2. The action of benzol is not restricted to certain types of leukemia.
3. The dosage should be from 3 to 5 Gm. daily. It should be given mixed with olive oil or milk to lessen the irritation of the stomach. It should be given when possible after meals.
4. Benzol may produce symptoms of gastro-intestinal irritation, such as burning, flatulence, nausea, and vomiting. Dizziness, albuminuria, bronchial irritation, and mucous membrane hemorrhages may occur.
5. When benzol is not tolerated by mouth, it may be tried subcutaneously or per rectum.
6. Benzol first causes an increase in the white blood-cells, and then a marked fall. This drop may go below normal, and even to a complete absence of white cells if the use of benzol is unduly prolonged.
7. The administration of benzol should always be stopped before the white cells reach a normal figure.
8. Benzol in moderate doses has a favorable effect on the red blood-cells and hemoglobin.
9. It is better, when possible, to combine the use of benzol with the X-ray.
10. Benzol has a favorable action to a limited degree on some types of pseudo-leukemia.—Interstate Med. Jour., June, 1914.

TREATMENT WITH ELARSON

E. Neisser, of Breslau, has found elarson to be of value in cases where other arsenical preparations have not been successful. This was observed especially in Grave's disease, where in one case besides its other advantages, it caused a marked improvement in appetite, which previously nothing seemed to stimulate. The author never knew elarson to cause gastric disturbance nor diarrhea, nor did he see any unfavorable effect on menstruation, as occurred in a case of Scheibner. He begins by giving one tablet three times a day; after two days the dose is increased by one tablet each day until three tablets are taken three times a day. This is continued for two weeks when the dose is decreased gradually in the same way.

In connection with one of his cases Neisser noted a symptom, which no one else has as yet observed. A neurasthenic woman of 37, suffering from neuralgia of the head and lumbar region and pressure about the heart, improved as soon as elarson was prescribed. However, during the night following the day, on which she had for the first time taken three tablets three times, frequent micturition set in. She was forced to urinate every ten minutes, but there was no dysuria. As soon as the dose was reduced to eight instead of nine tablets a day, this symptom disappeared and did not reappear when a week later she resumed taking three tablets three times a day. The examination of the urine revealed no abnormalities at any time. To explain this frequent micturition is rather difficult, possibly one could assume it due to an idiosyncrasy towards the larger dose and that the latter was borne without difficulty after a longer administration of smaller amounts.

A second case, reported by Neisser, concerns a woman of 50, on whom a panhysterectomy had been done and who complained of dizziness, pressure on the head, palpitation, etc., symptoms such as are frequently observed after the ovaries are removed. She was also very anemic, hemoglobin 45 per cent., 3,350,000 red cells. Three ovaraden tablets a day for over four weeks caused but slight improvement of the subjective symptoms and of

the blood condition. During the next four weeks besides ovaradentriferin tablets, elarson was taken, beginning with one tablet three times a day and gradually increasing to three tablets three times a day. This medication was attended by marked improvement. The patient felt and looked better and the blood examination revealed 60 per cent. hemoglobin and 3,873,000 red cells.

The anemia in this case is of the chlorotic type and the insufficient blood formation can here also be taken as due to (as von Noorden suggests for true chlorosis) the lack of stimulating effect, that the ovaries supposedly have on the bone marrow. Just as elarson in combination with iron has proven to be efficient in chlorosis, so in this case of insufficient blood formation after ovarectomy, a combination of iron and arsenic in the form of elarson, acted more beneficially than iron alone or than iron and ovarian substance which has been of value in many cases.

In conclusion Neisser states that the blood pressure of this patient, which was 160 Mm. of mercury when she came under observation was reduced to 130 after four weeks. This was also seen in several other cases, especially in patients at the menopause, in whom a rise of blood pressure above the normal without organic change is so frequently found.—Therapie der Gegenwart, 1914, No. 5.

LARGE DOSES OF QUININE IN BASEDOW'S DISEASE

In a severe case of Basedow's disease with rapid emaciation and mild glycosuria, René Gaultier gave quinine sulphate 0.35 Gm. (grn. $5\frac{3}{4}$) three times a day with the result that the pulse rate soon decreased and gradually became normal, while increase in weight and strength and disappearance of diarrhea, tremor and cough also occurred. Although the administration of quinine, sometimes as much as 30 grains per day, was kept up for five months, no symptoms of quinine intoxication were produced. This marked tolerance for the drug, Gaultier also noticed in other cases of Grave's disease, in which quinine had been of great benefit. In literature one may also find numerous instances of the good effects produced by prolonged quinine medication and of extraordinary tolerance for the same. As some of the symptoms of exophthalmic goitre must be attributed to a dilatation of the vessels of the head and neck, one can understand that quinine acts favorably in this condition on account of its vasoconstricting power. In some cases the simultaneous use of the serum of thyroidectomized animals seems indicated. Gaultier concludes that prolonged medication with large doses of quinine is to be recommended in Basedow's disease, on account of the frequency with which beneficial results are obtained, the ease of its administration and the marked tolerance, displayed by patients, even when gastrointestinal disturbances are present.—Bull. gén. de Therap.

TREATMENT OF SLEEPLESSNESS IN CARDIAC INSUFFICIENCY

In considering this subject, Albert Fränkel, says, that disturbance of sleep is observed in all cardiac cases, in all the various phases of the disease and in varying degrees of intensity. The treatment of sleeplessness due to subjective cardiac symptoms is facilitated, if some casual factor for the disease such as lues, the abuse of tobacco, etc., can be discovered. Often, however, in angina pectoris we must treat the patient symptomatically and be satisfied to use rather unreliable remedies. On the other hand, in cases of continuous cardiac dyspnea or where attacks of cardiac asthma occur, we can readily combat the cause, as such symptoms are the result of weakness of the heart muscle and a pathological distribution of blood. Here digitalis is at our command, but for immediate relief Fränkel prefers the intravenous administration of strophanthin. The quieting effect of this preparation is not due to any hypnotic power, but can be attributed solely to its digitalis-like action on the heart. The rapidity with which strophanthin, given in this way, affects the heart, brings about immediate relief from the dyspnea, and therefore, rest and sleep. It does this not only in cases of mild cardiac insufficiency, but also in arterial disease with contracting kidney, where suddenly at night unbearable attacks of asthma occur. In these cases strophanthin brings relief with more certainty than camphor, renesection or even morphine. It can be given in spite of hypertension as therapeutic doses of digitalis and strophanthin should, in the author's opinion, be considered as having no effect on the blood pressure. Comparative studies have shown that digitalis per os combats these attacks of dyspnea more effectively if one or several strophanthin injections are given just previous to the beginning of the digitalis medication. By giving strophanthin injections in series all medication per os can be dispensed with.

In very serious cardiac lesions with constant dyspnea, as in the final stages, or even when Cheyne Stokes breathing is

present, strophanthin may bring about unexpected relief, even after digitalis per os has lost its power and morphine and its derivatives have failed to effect in any way the distress of the patient.

Fränkel's experience furthermore leads him to state that while morphine is indispensable in very severe angina pectoris or in moribund cases, where all cardiac therapy is futile, it should not be used until strophanthin has been tried intravenously.

In 1913 the author administered strophanthin intravenously 425 times to fifty patients and no injurious or unpleasant effects were noted. It is to be remembered, however, that 0.5 to 0.75 Mg. is the normal dose. If detrimental effects were observed in previous years they were due to the fact that 1 Mg., now considered the maximum dose, was stated to be the proper amount for injection. Since the present dosage has been decided upon, the intravenous administration of strophanthin may be considered as being as harmless as any form of theraphy, capable of producing such pronounced effects.—Therapie der Gegenwart, No. 5, 1914.

MESENTERIC GLANDS IN SCLERODERMA

Schwerdt some years ago pointed out the value of the mesenteric glands in scleroderma. W. Kölle tried this organotherapeutic treatment in the same disease with very satisfactory results. The author prescribed for a woman, aged thirty-seven, two tablets a day of 5 grains of dried mesenteric gland substance (so-called cœliacin), together with massage and hydrotherapeutic measures. The tablets were so well tolerated that he increased the dose to three tablets. In about six weeks the patient had gained about four pounds in weight, there was a striking improvement in her appearance, the vascular supply to the skin of the face was everywhere good, the glossiness had disappeared, it was much less tense and could be moved freely in all parts; the subcutaneous tissue had in almost all parts returned to its normal consistency, the skin of the face and brow could once more be wrinkled and the edema of the thoracic wall had disappeared. Induration was still present in the thighs alone. The purely atrophic areas of the hands and feet had, remained unaltered. The patient could walk much better. The nights were less disturbed than before treatment. Subsequently, by further administration of the organic extract, the improvement was maintained in a surprising manner. Although the case has been under observation for much too short a time to allow a definite opinion to be formed, yet the result recorded by the author is so encouraging that this organotherapeutic treatment deserves full consideration in similar cases. The author explains the effect of the administration of mesenteric gland by supposing that it replaces the absent function of the mesenteric glands, *e.g.*, the autotoxins are rendered innocuous. Kölle does not support the view that the autotoxins act directly on the organs supplied by the sympathetic, which are manifestly alone attacked in the morbid picture of scleroderma and the above explanation would perhaps in part account for improvements in the morbid symptoms. Nor, in his opinion, does the sympathetic undergo alteration; it may under certain circumstances regain its functional capacity, the organs which it supplies, provided they have not degenerated, may recover and it would be possible along these lines to imagine a complete cure.—E. Merck's Ann. Report, Vol. xxvi.

VERONAL IN NERVOUS PALPITATION

A troublesome symptom, which is prominent in many nervous individuals and inhibits their desire for work and pleasure, is palpitation. If the usual therapeutic and dietetic measures do not relieve this symptom, Kögler suggests that veronal be tried. Ten grains taken before retiring, produces in an adult man the sound sleep, which most neurasthenics do not get as a rule, and quiets the cardiac irritability. Veronal-sodium also proved to be efficacious in Kögler's hands. Seven and one-half grains at night was sufficient to induce sleep in men and to gradually bring about an allayment of the agitated heart action. Patients who took 7½ to 12 grains of veronal regularly at night, never noticed any interference with their capability for work. Kögler did not observe after-effects such as headache, lassitude, or interference with the intellect or gastro-intestinal function.—Medico, 1914, No. 11.

PERHYDROL FOR BLEACHING TEETH

When hemorrhage has occurred into the tubules of the dentine of a tooth, as a result of injury, the tooth must be bleached in order to preserve it. In order to obtain good results, which is almost always possible with teeth in this condition, Franzgrote points to a conscientious treatment of the root as the first important step. After this is done, bleaching can be undertaken, perhydrol being the most suitable

preparation for the purpose. A bit of cotton, saturated with perhydrol is placed in the nerve canal and several shreds of cotton, also thoroughly moistened with perhydrol are conveyed into the cavity and on to the surface of the tooth. The rays from a quartz lamp are then allowed to act on the tooth for from fifteen to twenty minutes. The cotton on the surface as well as that in the cavity and root canal must be kept mosit. The entire procedure is repeated in a few days. If a quartz lamp is not available, an ordinary electric pocket lamp will answer the purpose. After the second application, which is usually all that is necessary, the root can be filled. For this it is best to employ chloropercha or guttapercha points or paraffin, as when these materials are used, subsequent discoloration is less apt to occur.—Zahntechnische Rundschau, Vol. 18, No. 5.

VERONAL IN DELIRIUM TREMENS

Kurt Schneider describes a treatment of delirium tremens with baths of long duration and also expresses himself as not in favor of the use of hypnotics in this condition. E. von der Porten takes exception to the latter statement and refers to his article in Therapie der Gegenwart, No. 6, 1910, in which two series of cases of delirium tremens are reported, viz.: 264 patients treated with veronal and 396 patients, in which other sedatives were used. This is a much larger material than was at Schneider's command. After careful consideration of his cases, Porten draws the conclusion that veronal acts more favorably in delirium tremens than chloral and bromine and that it counteracts psychomotor excitement. Of course, much larger doses than are usually given must be employed. If a dose of 30 grains is not sufficient, and usually it is not where the delirium is fully developed, then another 15 grains are administered five hours later. In very refractive cases the author states one may give as much as 60 grains in the first twelve hours. Detrimental action on pulse and respiration in the cases reported was not observed. The fact that veronal controls the motor unrest, renders it possible for patients to sleep in their beds, and makes the isolation cell practically superfluous. For hospital use and in private practice veronal is of great importance, because it is not only capable of preventing an imminent delirium from reaching the violent stage, but also successfully controls the condition when fully developed.—Münch. med. Woch., No 21, 1914.

TREATMENT OF DYSPHAGIA IN TUBERCULOUS LARYNGITIS

Assuming that atophan is not only a specific for gout, but also acts as a general analgetic, B. Goldschmidt, of Berlin, tried this preparation in four cases of tuberculosis of the larynx. In all the cases more or less marked edoema of the epiglottis and of the aryteno-epiglottic folds existed. After taking atophan the patients were improved subjectively, and objectively the edoema was seen to recede considerably. The infiltrations of course remained unchanged. Besides the atophan, hot compresses were used and the distressing local application of cocaine, alypin, etc., had to be resorted to less frequently or could be entirely omitted. Goldschmidt suggests that this effect of atophan should be studied more extensively as this preparation apparently acts not only analgetically, but also antiphlogistically. Starkenstein and Dohrn (Therapie der Gegenwart, 1913, No. 5) have demonstrated the latter action of atophan experimentally.—Therapie der Gegenwart, 1914, No. 5.

FIBROLYSIN IN PYLORIC STENOSIS

In an article on the treatment of pyloric stenosis, J. von Kováts, of Budapest, deals chiefly with the use of thiosinamine in the form of fibrolysin. He lays stress upon the mechanical stretching of the scar tissue in connection with the administration of fibrolysin. If the muscle of the stomach wall is not sufficiently powerful to dilate the ring of connective tissue, softened by fibrolysin, other means must be employed for this purpose. Kováts describes a case in which he injected fibrolysin and caused the patient to take considerable fluid with her meals and then lie on her right side for two hours. The weight of the fluid stomach contents was to dilate the stenosed pylorus. After the second injection the patient stated that "the fluid is running through her stomach." After that the gastric functions improved remarkably and permanently. About two months later a gain of thirty-three pounds was recorded, the appetite was good and thirst normal; urine was voided more frequently and in much larger quantities; cathartics were no longer necessary. Three and a half years after the treatment the condition of the patient is equally satisfactory. It seems advisable to measure the blood pressure in the course of the treatment, as a rise in tension may occur as a result of increased absorption, produced by fibrolysin.—Med. Klinik, 1914. No. 11.

MERCK'S ARCHIVES

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JULY, 1914

EDITOR'S NOTES

Progress in the Medicinal Treatment of Blood Diseases

The therapeutics of the diseases of the blood and blood-forming organs has advanced materially during the last twenty years. In fact since the beginning of the present century the measures employed in dealing with pathological blood conditions have become much more efficient. In the opinion of Morawitz, of Greifswald, the advance in the diagnosis of blood diseases has done much to bring about better methods of treatment. The examination of a blood smear and at least an estimation of the hemoglobin are usually carried out by practitioners to-day, with the result that many errors are avoided, pseudoanemia is no longer mistaken for true anemia, serious pathological conditions are recognized much earlier and the various forms of blood disease are differentiated from one another more carefully and with greater certainty.

If the literature of 1880, or thereabouts, is looked into, we realize that considerable advance has been made. In those days Biermer and Eichhorst described pernicious anemia as progressing steadily to a fatal termination. We still see the disease take this course, but much more rarely. Pernicious anemia nowadays tends markedly to remissions, lasting months or even years. True, a specific for the disease is not at our command, nevertheless we should be grateful for the progress, which enables us to delay the end of this disease for months or even years. The same can be said of leukemia.

In his paper, recently published, Morawitz says that the indications for the use of iron and arsenic, the classical remedies for blood disease, are more distinctly defined than formerly, while among the new medicinal measures that have been introduced, benzol, thorium X and calcium are worthy of attention. Considering that iron and arsenic have been employed for so many years, one would expect that the mechanism of their action would have been made clear, but unfortunately, as is so often the case, theoretical knowledge has not kept up with empiricism and it is not known to-day how to explain, in all respects, the therapeutic value of these drugs. Many theories have been advanced, but none seem to meet all contingencies. In spite of this rather unsatisfactory theoretical knowledge, experience has brought out the indications for iron and arsenic more clearly and in what forms they are best administered.

Chlorosis and secondary anemia, whether due to hemorrhage or other factors, are the important fields for iron. It is of no use in pernicious anemia nor in so-called pseudoanemia. Iron should not be prescribed for any young person, who happens to be pale and to have indefinite symptoms. Paleness is often not due to anemia but is caused by nervousness, a condition not benefited by iron. It may be claimed that it is better to give iron too often than otherwise, but such a standpoint is unsatisfactory diagnostically and untenable therapeutically, because iron is apt to produce dyspeptic symptoms and constipation, both of which can readily cause changes in nutrition, which are very likely to be injurious to these pseudoanemic patients.

Besides the more distinct circumscription of the indications for iron, we have learned in recent times the fundamental fact that in chlorosis large doses of iron are to be used. Von Noorden considers 0.1 Gm. (1½ grain) the dose, which is most effective and well borne at the same time. The Leube school, especially Arneth, thinks 0.7 Gm. (12 grains) should be given each day, but Morawitz regards 0.1 Gm. (1½ grain) sufficient as it produces excellent results, and by-effects are less frequent than with larger doses. Undesirable symptoms are best avoided by never giving large amounts of iron on an empty stomach. The quantity of iron, referred to, is contained in five or six Blaud's pills or in 30 Cc. (f. ʒi) of ferra-

tose. But such large doses of the organic iron preparations are practically never given and it might be of interest to ascertain whether smaller amounts of the organic preparations are capable of producing as beneficial effects as inorganic iron in larger quantities. There is probably a difference in the absorption, as von Noorden suggests. Regarding the question which of the large number of iron preparations now on the market should be used, Morawitz advises physicians to confine themselves to a few with which they are thoroughly familiar, and of whose efficiency they are convinced. If dyspeptic symptoms are not present and no ulcer exists, Blaud's pills seem to act satisfactorily. If the stomach is sensitive one of the organic iron preparations, which apparently do not liberate their iron content until they reach the intestine, should be used. Ferratin, first prepared by Schmiedeberg, is the prototype of this group.

It has been known for some time that iron and arsenic combined act very well in chlorosis and secondary anemia. Whether the combination is always more effective than iron alone is not definitely settled, but it is certain that excellent results are obtained with arsenoferratose, while Ewald recommends arsentriferrol in secondary anemia due to intestinal conditions.

The administration of iron in other ways than per os has not gained much favor. Senator and Quincke suggested its subcutaneous use originally and recently Kopytko has injected daily 1 Cc. of a 10 per cent. solution of iron pyrophosphate with sodium citrate intramuscularly. It is doubtful whether irritation of the intestine is avoided by this method, as iron is finally eliminated for the most part by the intestine no matter how it enters the system.

In recent years considerable progress has become manifest in regard to the use of arsenic. Ehrlich's work has enabled us to administer large doses of this drug in a comparatively non-poisonous form. It is evident that this has been of advantage in the treatment of blood diseases. Pernicious anemia and leukemia are the chief indications of arsenic. Its administration like that of iron, should be undertaken only with strict indications, as besides gastrointestinal symptoms, more serious consequences may occur.

Salvarsan has been advocated by many authors for pernicious anemia, others oppose its use. Bramwell injects small doses 0.3 Gm. (5 grains) intravenously and repeats it several times. In seven cases very good results were obtained with very few exceptions. Wachtel considers salvarsan of value only in the rare cases of pernicious anemia, which develop on a luetic basis. In general no distinct superiority can be attributed to salvarsan. Remissions occur in pernicious anemia with the other arsenic compounds also, an effect presumably due to stimulation of hematopoiesis. If arsenic in the usual forms fails to benefit, then salvarsan should be tried, but one must not expect too much from it. Recently Perussia reported a case of splenic anemia with negative Wassermann, in which salvarsan treatment proved efficient. Arsacetin has been shown to be very effective in pernicious anemia. Nägeli and Klemperer gave 0.05 Gm. (¾ grain) three to four times a day per os.

For a long time arsenic was the only remedy from which benefit could be expected in leukemia, but only in very rare cases did prolonged and energetic arsenic medication succeed in entirely reducing the splenic enlargement and bringing the number of white cells within normal limits. The advent of the Roentgen ray treatment proved an effective addition to our methods of dealing with leukemia, for there can be no doubt that properly conducted Roentgen ray therapy, especially if combined with arsenic, does more for this disease than anything else we know to-day. Patients treated in this way frequently live five or more years and their ability to work is for the most part retained. Although with the X-ray and arsenic we were fairly well equipped to combat leukemia, the introduction of the benzol treatment by Koranyi in 1912 was very welcome. The large literature which already exists on the subject makes a guarded opinion regarding the capabilities of benzol feasible. It is certain that benzol can reduce the number of leucocytes to a greater extent than arsenic and that the pathological forms (myelocytes, etc.) are decreased more than the mature forms of leucocytes. The liver and spleen frequently become smaller, although the enlargement of these organs occasionally persists notwithstanding the diminution in the number of white blood cells. With the improvement of the objective symptoms the general condition of the patients is bettered. Benzol is not superior to the X-ray treatment and is known to have been entirely ineffectual, especially in advanced cases with very high leucocytoses. Türk points out that the erythroyctes diminish when benzol is taken; it should therefore not be recommended in leukemia when the red cell count is below normal. Morawitz

sums up the indications for benzol by saying that it should be tried when Roentgen treatment is unavailable or when other methods (arsenic, X-ray) have failed, and that it be given as an adjunct to X-ray therapy to hasten results and make them permanent. 0.5 Cc. (7½ m.) benzol with an equal quantity of olive oil in gelatin capsules is the administration recommended by Koranyi. It can also be prescribed in drops in milk, 30 drops five to ten times a day. Three to five grams should be given in twenty-four hours for about four weeks.

The astonishing success of actinotherapy suggested that the intramuscular or intravenous injection of a radioactive substance might influence favorably serious blood diseases. Falta and Plesch were the first to use thorium X in pernicious anemia and in leukemia. Different authors have used different amounts. Plesch gave 3,000,000 M. E. in leukemia, Falta injected 50 to 100,000 M. E. subcutaneoulsy, Klemperer about the same intravenously. Transitory but astonishing results were seen. Marked diminution in the number of leucocytes was reported by Falta even when the Roentgen ray had failed. In one case Plesch noted a reduction from over 100,000 to 4,000 in fifty-three days. Plesch also achieved noteworthy but temporary improvement in pernicious anemia. Klemperer and Hirschfeld saw beneficial effects in leukemia, but they also observed transition into acute leukemia after thorium X. Morawitz observed a striking result in one case of acute leukemia; but its permanency remains in doubt, as the patient was seen only for a short time thereafter. If thorium X is capable of doing the same in other acute cases, it is sure of an important and lasting place in therapy; the results it has produced in chronic cases will hardly give it this position.

Finally a consideration of calcium, though not a new remedy, but the application of which has been extended in recent years, seems in order. On account of its relation to the coagulation of blood, Wright as early as 1896 recommended it for hemorrhagic diathesis. Morawitz used it with success in 1903 in purpura hemorrhagica. However, for some reason or other, it was not used to any extent. In 1911 the experiments of Chiari and Januschke shed new light on the subject. They showed that the action of calcium was not due to an effect on the coagulability of the blood but to its ability to render blood vessels less permeable. It follows from this that bleeding due to an abnormally permeable vascular system is favorably influenced by calcium.

Since then, calcium is frequently used. Morawitz obtained excellent results with it in chronic urticaria of unknown origin. In purpura, calcium also seemed efficient in the few cases he has had the opportunity of seeing. It is, of course, also to be tried in the secondary hemorrhagic diathesis, occurring in infectious diseases, leukemia and severe anemia. Calcium is usually administered in the form of a 3 per cent. solution of calcium lactate in tablespoonful doses several times a day. The large doses, 15 Gm. a day (54), which Voorhoeve considers the only effective ones, are not favored by Morawitz as calcium is not entirely innocuous. Anuria and edemas are known to have occurred in one case, possibly due to a change in the renal vessels, and even with small doses constipation is frequently a consequence. It is best to avoid calcium chloride as it is not well borne by the stomach. Subcutaneously calcium chloride is painful, but Müller and Saxl state that they use 5 to 7 Cc. of a mixture containing 5 per cent. $CaCl_2$ and 10 per cent. gelatin, Merck, intramuscularly with success.

In concluding his review of the advances in the therapy of blood diseases, Morawitz says: Although a specific agent for leukemia and pernicious anemia is not as yet available, we can no longer consider ourselves therapeutically powerless in regard to these diseases. In the course of time procedures have been acquired, which delay the course of the disease and prolong the life of the patients, perhaps for years, besides making them more comfortable and maintaining their working capacity Surely these are facts for which both physician and patient should be grateful.

***

Scopolamine Poisoning

M. T. Sudler, of Lawrence, Kan., reports a peculiar case of poisoning from one-half grain of scopolamine, that had been substituted by mistake, for homatropine in an application to the eye. The powder was properly labeled, however, but this was not noticed by the oculist. The patient within a few minutes was seized with dizziness and active delirium; the pulse became rapid and at times inidistinct. One-thirtieth grain of strychnine was given without any other medication and the patient gradually improved. He left the hospital on the third day. There is no evidence of any permanent injury.—Jour. A. M. A., June 20, 1914.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Second Attacks of Scarlet Fever.—Lammerhirt made a report on this subject from a practice which afforded an experience of from thirty to fifty cases of scarlet fever a year. In the course of ten years, he observed three cases in which the same patient had the disease a second time. The first case was a child who had the disease in 1903, at the age of two years. At this time, there was a typical angina and exanthem. At the end of a year and a half he had a second attack of the disease, from which he died on the fourth day, while his brother, six months of age, who also had the disease at this time, finally recovered.

The second case was that of a boy, aged eleven years, who, in 1912, had an intense scarlatiniform eruption and angina, and, later on, typical desquamation. The mother who nursed the child was also taken with tpyical scarlet fever. This boy had had, eight months previously, a very severe scarlet fever, the diagnosis of which was made from information furnished from the parents, to the effect that there was an intense angina and swelling of the cervical lymph nodes, a marked exanthem, and, later on, desquamation.

The third case was that of a boy of twelve years, who during the months of June, 1913, was taken with scarlet fever, with high temperature, characteristic eruption, sore throat, and desquamation. The mother and sister of the patient also had the disease at this time. The same boy had had, in 1907, a serious typical attack of scarlet fever, at which time he was under the care of another physician.

These observations, Lammerhirt thinks, tend to prove that immunity to scarlet fever is not always perfect, and that having had the disease once is not guarantee that one may not have a second attack, and even a fatal outcome from the second attack. Of course, one realizes that in any infectious disease the immunity, for some unknown reason, may not be perfect, and may not be lasting. At the same time, those who have had a large experience with scarlet fever feel that the immunity from this disease is, as a general rule, as perfect as is found in any of the infectious, and second attacks of undoubted scarlet fever are certainly exceedingly rare. The diagnosis of eruptive fevers, particularly scarlet fever is often a matter of great difficulty, and undoubtedly many of the so-called second attacks of scarlet fever are not scarlet fever at all, but some other disease with a sore throat and an eruption.—Progressive Medicine, xvi, No. 1.

Source of Error in Testing Digitalis.—In determining the strength of digitalis preparations on frogs, R. Gottlieb points out that there are certain sources of error, which are not always taken into consideration.

Attention is first called to the difference in the sensitiveness of frogs in summer and winter, which, if not taken into account, leads to markedly wrong conclusions. This variation in the susceptibility of frogs according to season is apparently connected with the state of their nutrition. A preparation, which is actually always of the same strength, may, in summer, appear to be 50 per cent. weaker than at the end of the winter. If in testing digitalis preparations, these differences are not considered, preparations tested in summer, must appear of less value, though in reality they are not.

Thus ampules, containing a standard digipuratum solution and put through the same process of sterilization, proved to be of the same strength, when tested during three successive winters. In summer, however, when frogs possess greater resisting power, the same ampules seemed to be 30 to 40 per cent. weaker.

The sensitiveness of frogs changes not only with the seasons; the temperature, existing at the time, also plays a rôle. The influences of season and actual temperature may counterbalance each other, or may aid each other in producing an increase or decrease of resistance on the part of the frog. If in mid-summer one uses frogs of good resisting power and slight susceptibility to poisoning, very high room temperature will tend to lower their resistance and bring it nearer to that of winter frogs. On the other hand, a preparation will appear especially weak, if used in May or in the fall, that is when room temperature is likely to be moderate and the frogs are at the height of their resisting powers.

In order to obtain reliable data concerning the strength of a certain solution, there is but one thing to do and that is not to use only one or two frogs, but as many as possible. This is necessary because, by chance, certain frogs for unknown reasons may vary from the standard, a fact that becomes of less significance as the number of frogs tested is increased.

Another source of error is the method of injection. To avoid interference with absorption not more than 0.5 Cc. should be injected. Special care should be taken that no muscle tissue is injured while the injection into the lymphsac is carried out. Digitalis preparations are absorbed from muscle tissue, with considerably more rapidity than from the lymphsac.

The various physiological experiments that are recorded in the tables, accompanying the article, were carried out with Digipuratum-Knoll.—Muench. med. Woch., 1914, No. 15.

Chlorosis and Anemia.—R. Gelhausen, of Hamburg, writes that arsenotriferrin is chiefly indicated in three groups of diseases: chlorosis and the various forms of anemia, the scrophulous diseases of children, and neurasthenia and hysteria if accompanied by disturbances of nutrition and blood formation.

Good results were obtained with arseno-triferrin in chlorosis and anemia both as far as rapidity and intensity of action are concerned. Forty-three patients suffering from chlorosis or anemia were treated with the drug. Only three of these did not stand the preparation well at first and complained of pressure and fulness in the epigastrium, nausea and pains in the abdomen after taking the tablets. The tablets were then broken up and taken with other food during the chief meals. All the disagreeable after-effects then disappeared very soon. The preparation was effective in all of the forty three cases, even where epigastric pain had been complained of.

Children were given one to three tablets daily, according to age, after melas. Adults took one tablet three times daily for ten days, then two tablets three times daily for four to six weeks, then finally, one tablet three times daily for ten to twenty days. The treatment thus lasted six to nine weeks. After a rest of one month, the treatment was repeated once or twice, if necessary.—Hamburg. Shrift f. Soc. Hyg. u. prakt. Med., 1913, No. 1.

Book Notes

THE HYPODERMIC SYRINGE. By George L. Servoss, M.D. Unique in subject matter this work of Dr. Servoss supplies a great need. Hypodermic medication has taken so prominent a place in therapeutics that a working guide of this sort has been needed for some time. An enumeration of the chapter headings will serve to indicate the scope of the book: The Syringe, Technique, Remedies, Drugs and Chemicals, Mercurials, Antitoxins and Serums, Bacterins, Tuberculins, Anesthesia, Shock, Syphilis. The chapters on Bacterins are especially comprehensive, some 132 pages being devoted to that subject. We are sure that the work will be welcomed by those who desire to investigate further this new and important branch of therapeutics. (Physicians' Drug News Co., Newark, N. J. Cloth, Price, $2 net. 1914.)

THE DIAGNOSIS AND TREATMENT OF DIGESTIVE DISEASES. A Practical Treatise for Students and Practitioners of Medicine. By George M. Niles, M.D., Professor of Gastroeterology and Clinical Medicine, Atlanta Medical College, etc. With 1 colored plate and 86 other illustrations. This is a work of unusual value, one that should find a place in the library of every practitioner. It is the work of a man who thoroughly knows his subject and who knows how to present it. The volume opens with a discussion of the various diagnostic methods including such subjects as the examination of feces, Roetgen examination, palpation, analysis of stomach contents, etc. The use of the stomach tube is described in very great detail and many excellent photographs are given to illustrate the technique. Especially interesting is the chapter on Psychotherapy in Gastrointestinal Diseases. In the second part, which is devoted to special diagnosis and treatment, the following subjects are considered: Neuroses, motor, sensory, and secretory; The Gastrites, acute and chronic; Motor Insufficiency and Dilatation of the Stomach; Hematemesis, Ulcer of Stomach; Tumors of the Stomach—Foreign Bodies; Duodenal Ulcer—Intestinal Ulceration—Proctitis; Diarrhea and Dysentery; Constipation; Intestinal Parasites. (P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia. 597 pages. 1914.)

TRAITÉ MÉDICO-CHIRURGICAL DE GYNÉCOLOGIE, par L. Labadie-Lagrave, médecin honoraire des Hôpitaux, et F. Legueu, professeur à la Faculté de Medecine de Paris, chirurgien de l'Hôpital Necker. 4e édition, revue et augmentée, avec 491 gravures dans le texte, en noire et en couleurs. 1 fort volume grand in 8° de XII.—This new edition, succeeding as it does the previous edition after several years, is practically a new work. The authors have brought the matter right down to date. The chapter on anesthesia has been completely revised and includes a thorough discussion of the subject of preanesthesia. Even to enumerate the many new and valuable additions would be out of the question in the space we have at our disposal. Suffice it then merely to call attention to the discussions on urinary fistulæ, fixation of the uterus, salpingitis, cysts, malignant growths, hysterectomy according to the methods of Wertheim and of Schuchardt-Schauta, postoperative complications, etc. The volume contains 1336 pages of text and almost 500 illustrations, many of them new, all of them excellent. The work is notable not only for its completeness but for its lucidity of exposition, a point of great practical importance. The volume is substantially bound, and comprehensive indexes facilitate reference. (Librairie Felix Alcan, Paris, France. Price, 30 francs, 1914.)

TREATMENT OF CHRONIC LEG ULCERS. A Practical Guide to its Symptomatology, Diagnosis and Treatment. By Edward Adams, M.D. —A handy and practical little work that covers the field completely and carefully and minutely outlines the treatment of chronic ulcers of the leg. The numerous illustrations greatly enhance the value of the text. A chapter on the surgical treatment of enlarged veins is included. The work will prove of great value to the general practitioner. (International Journal of Surgery, 100 William St., New York. pp. 122. Price, $1.00, cloth. 1914.)

BEHANDLUNG KOSMETISCHES HAUTLEIDEN. (Schönheitsfehler) von Sanitätsrat Dr. S. Jessner. Dritte Auflage.—A short treatise on the treatment of various skin diseases, especially those of a disfiguring nature such as warts, naevi, ichthyosis, acne, chilblains, pigment anomalies, hypertrichosis, alopecia, hyperhidrosis, etc. The work is thoroughly practical and abounds in formulaes for use in cosmetic therapy. It is one of the series of Dr. Jessner's well known "Dermatological Lectures for Practitioners" many of which have already been noted in these columns. (Curt Kabitzsck Verlag in Würzburg, Germany. 158 pages. Price, paper, M. 2.50; bound, M. 3. 1914.)

PROGRESSIVE MEDICINE.—A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., assisted by L. F. Appleman, M.D., Vol. XVI, No. 1, March 1914. Interesting and timely articles in the chapter on the "Surgery of the Head, Neck and Thorax," by C. H. Frazier, are on the pineal body, the hypophysis, trigeminal neuralgia, repair of defects in the skull, cancer, hygroma of the neck, the thyroid, thymus, and mammary glands. "Surgery of the Thorax, Excluding Diseases of the Breast," is the subject of an instructive chapter by G. P. Müller. The progress made in the study of the infectious diseases including acute rheumatism, croupous pneumonia, and influenza is reviewed by John Ruhräh. Under the title "Diseases of Children," F. M. Crandall discusses the diseases of the newborn, pyloric obstruction, hernia, urinary lithiasis, feeding, etc. "Rhinology and Laryngology" is discussed by G. B. Wood and "Otology" by A. B. Duel. (Lea & Febiger, Philadelphia and New York. Price, paper, $6.00 per annum.)

Pamphlets Received

Chronic Intestinal Stasis. By W. S. Bainbridge. Reprinted from the Maine Med. Jour., July, 1913.

Hema-Uro-Chrome. A new laboratory test for cancer and sarcoma, also a method of separating bile acids and pigment with the application of Torquay's test, indican being obtained if present. A Preliminary Report. By Theodore G. Davis, 624 Esplanade, Redono Beach, Cal. Reprinted from the American Jour. Medical Sciences, June, 1913.

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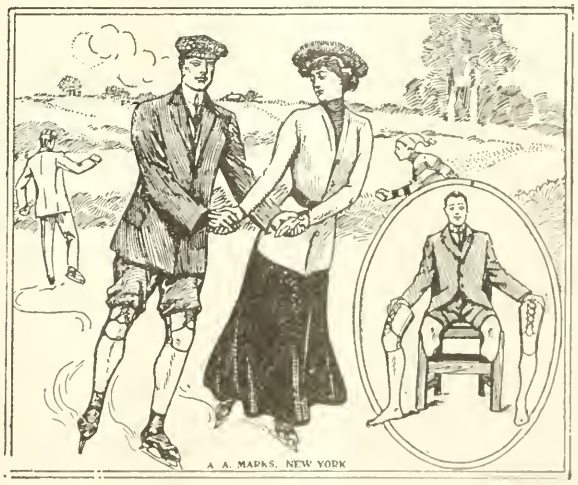

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THE MORTALITY FROM MEASLES is so great that the medical profession should take immediate steps to disabuse the minds of mothers that the disease is so trivial that no pains need be taken to prevent their own children contracting it or giving it to others. The last census report shows that in the registration area it caused 7/10 of 1 per cent. of all deaths, or about ten per 100,000 of population. More recent estimates place the deaths at 1 per cent. of the total mortality from all causes, but if we include the cases reported as bronchitis, pneumonia or tuberculosis, it is safe to say that it causes much more than 1 per cent and that the total yearly deaths in the country are 12,000 or more, mostly young children. The census report says: "Undoubtedly sufficient attention is not given by the health authorities and by the public to the restriction of this disease." We heartily concur in this opinion. Experience shows that the public needs instruction and that it complies with reasonable restrictions as soon as it learns the necessity. Laymen are not fools and will not intentionally kill their own offspring, nor will they deliberately murder other children. The deaths are more numerous in cities. The disease is now quarantinable in New York State and the restrictions upon school attendance should be much more rigid than the law requires. People must also be told that it is infectious even before the stage of eruption and perhaps as long as there are nasal discharges.—American Medicine.

TYPHUS.—J. F. Anderson, of Washington D.C., gives a review of the history and literature of the so-called Brill's disease and its identification with thyphus fever. This shows that the assertion made by Anderson and Goldberger early in 1912, that typhus is actually present at all times in certain large cities of the United States, has been verified and that the disease is even more widespread. Taking the ratio given by Roger Lee that one in forty-seven cases of continued fever lasting over seven days in the Massachusetts General Hospital was typhus as applying also to other large cities of the country, Anderson gives the probable number of cases occuring in New York, Baltimore, Chicago, Philadelphia and Washington, and supports these estimates by certain hospital figures in these cities. It is probable that there have been as many unrecognized cases as cases diagnosed and that the disease is even more widespread than the figures would indicate. While the disease as generally observed has had a low case mortality and no great tendency to spread, there is a possibility of its becoming virulent and epidemic, which must be considered. Guinea-pigs are quite susceptible to typhus when inoculated intraperitoneally with blood of patients in the active febrile stage and he suggests as a means of collecting more accurate data the use of such inoculations from blood of patients with continued fever giving a negative Widal and blood-culture; especially in cases of sudden onset, a typical eruption, intense headache, apathy and prostration. He believes that such methods would prove, if carried out, that typhus is more prevalent in our large cities than has heretofore been generally believed.—Jour. A. M. A.

ANTERIOR WEAK-FOOT, or sinking of the transverse arch through the heads of the metatarsals, is a cause of painful feet often overlooked and mistreated by the application of the usual flat-foot arch. It is not difficult to recognize objectively; subjectively, it is characterized by pain in the toes. It is apt to be marked by plantar callus.—Amer. Jour. Surg.

PYLORIC STENOSIS IN INFANCY.—It is surprising, says Emmett Holt, of New York. that, in view of the definiteness of the clinical picture and the frequency of the condition as shown by reported cases since 1897, our recognition of this condition goes no further back than that date. Almost everyone in public and private practice among infants is liable to meet one or two cases each year. His own experience includes fifty-seven cases, eighteen in private practice and the remainder in the Babies' Hospital. Pyloric stenosis in infancy presents many interesting and curious features. In the first place, it nearly always occurs in breast-fed infants, and bad feeding can hardly be invoked as a cause. The predominance in the male sex is noticed by all writers. In the fifty-five cases of his own observation in which sex was noted, there were only six females. No explanation of this fact can be given. Pyloric spasm is frequently spoken of as congenital, but it is very rare for it to appear at birth or even in the first week. Only two of his cases appeared as early as the first week. In a great majority the symptoms begin abruptly, even the hour can be noted by the mother. The abrupt development of vomiting and other symptoms and their disappearance in a certain proportion of cases in a few weeks, both point to spasm, but marked hypertrophy of the stomach has been invariably found at necropsies. and it is to this hypertrophy that pathologists say the disease is due. According to this view the symptoms have an organic rather than a functional basis. Holt himself holds that definite persistent spasm without hypertrophy is yet to be proved. The two elements, spasm and hypertrophy are probably present in every case but it is difficult to say which one is the cause of the other. The most constant and usually the first symptom is forcible and persistent vomiting. Gastric peristalsis is readily made out in most cases and a palpable tumor is usually found. One of the most valuable means of determining the pyloric obstruction and its degree is to measure the amount of gastric retention. The child is fed a measured quantity and the stomach emptied by aspiration three hours later. Holt advises Hess's duodenal aspiration apparatus for this purpose and considers this method better than the Roentgen ray. The constipation which follows is mechanical, due to the obstruction. As regards treatment the profession is divided. Physicians hold to the utility of medical treatment and show statistics in its favor, while surgeons take the opposite view. The crux of the whole question is, whether the symptoms and conditions are such that the patient will not live long enough for the pathologic condition to subside. The general mortality has been accepted by writers as about 50 per cent. There are medical risks and surgical risks. The former

are acute inanition or slow marasmus, the chance of intercurrent disease in the enfeebled child and of sudden death without apparent cause, as sometimes occurs. There is also a question as to whether complete recovery occurs under medical treatment or whether subsequent trouble may arise. The surgical risks are those of shock, non-union and exhaustion which exist in every case. Then there are the accidental risks which will be lessened by experience on the part of the operator. In private practice with the best environment Holt believes many patients will recover without operation, but in more cases operation is the least risky. The patient gets well quicker and does not have the long-drawn-out recovery. The post-operative treatment is very important and Holt emphasizes four points: hypodermoclysis, feeding, castor-oil and posture, the head being raised in bed, which is inclined at an angle of 135 degrees or more. Breast-milk is indispensable. The medical treatment for patients not operated on consists in careful feeding and stomach washing. The patient should be carefully watched and weighed daily.—Jour. A. M. A., June 27, 1914.

The routine operative management of subacromial bursitis by excision, recommended in some text-books, is not to be endorsed. It is better to break down adhesions in the bursa, without or with excision of thickened areas, remove the semi-fluid-calcareous material beneath the bursa, stitch the tear that may be found in the tendon, and put the arm up in abduction.—Amer. Jour. Surg.

The Individuality of the Cell.—The individuality of the cell was the theme of an interesting address given by Professor Siegmund von Schumacher at the opening of the Institute of Histology and Embryology at Innsbruck. It is known that the sperm of the drone is received by the queen bee in her nuptial flight, and remains active for the rest of her life in the receptaculum seminis. In the cloacal sac of the female salamander the sperm is retained active for two years after copulation. The bat is wed in autumn and becomes pregnant after her winter sleep. Living spermatozoa were found in the excised testicles of guinea-pigs kept at 0° C. eleven days after excision. Living human spermatozoa have been found in the uterus eight and a half days after cohabitation. The leucocytes of the frog showed ameboid movements after being kept three weeks in a moist chamber. Dog's blood kept ten days on ice was successfully transferred into a dog, and very little albumin or hemoglobin appeared in the urine. The movement of ciliated cells was observed in a tumor eighteen days after its removal from the nose. Pieces of the mucous membrane of the frog's mouth put in the dorsal lymph sac of the same animal showed active cilia after five months. Pieces of human skin kept in ascitic fluid for at least one week have grown on transplantation. The cornea of a hare kept at 0° C. has survived nine to twelve days and been successfully transplanted. The excised heart of a three months old child has been made to beat twenty hours after death. In the last few years the survival of tissue cells has been extensively studied, and the question arises as to whether true cultures are obtained. Harrison was the first to study the growth of nerve cells in pieces of the frog embryo; the axis cylinders were placed in clotted frog's lymph. Burrows substituted blood plasma; the plasma method is therefore incorrectly named Carrel's method. Carrel introduced the method of repeatedly alternating the environment of the tissue, first putting it in culture medium and warmth and then in Ringer's solution and cold. By this means he succeeded in keeping pieces of heart muscle pulsating for three months. The cell movement in explanted tissue has been kinematographically studied by Commandon, Levaditi, and Untermitch. The cells use the threads of fibrin as guides in their wanderings. While the cells of explanted tissues live and multiply, it is doubtful how far they show the characteristics of the particular tissue. It is said the new-formed cells take on an indifferent character and never show the characteristic formation of the mother organ. If true cultures of the cells of organs could be obtained the method would lend itself admirably to the study of histogenesis, metabolic processes, age and death phenomena of cells, etc.—Brit. Med. Jour.

The Pathologic Accumulation of Beta-oxybutyric Acid in the Body.—In the intimate study of the phenomena involved in the perversions of metabolism manifesting themselves in ketonuria, attention has been centered primarily in the estimation of acetone either in the excreta or in the organism itself. The analytic problems involved in the accurate measurement of this compound are less difficult and the methods less tedious than those pertaining to the other so-called "acetone bodies," as this group is sometimes collectively called. Yet there can be little doubt that the key to the situation is really to be found in the presence or production of beta-oxybutyric acid which in good measure governs the subsequent appearance of acetone and diacetic acid. In the development of ketonuria, acetone is the first of the three related compounds to appear. When from 0.4 to 0.5 Gm. of acetone is present in the day's urine diacetic acid may be found; but beta-oxybutyric acid does not usually become evident until the amount of acetone exceeds 1 Gm. After this the chief increase is in the beta-oxybutyric acid, which often amounts to from 30 to 80 Gm., whereas the diacetic acid and acetone rarely exceed from 7 to 8 Gm.

The presence of considerable amounts of the "acetone bodies" in the urine foreshadows an impending coma and is a familiar symptom in the severer forms of diabetes. It is therefore a matter of no small moment to know where and to what extent these harmful products may accumulate in

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the body. Beta-oxybutyric acid has been reported to occur in the blood and various organs of patients dying in diabetic coma, figures as high as 0.4 per cent. being reported for the blood. With improved methods of analysis Sassa has observed that the blood and organs of man and various animals in health normally yield traces of beta-oxybutyric acid. The distribution of the compound throughout the parts of the body is fairly uniform and the content in the organs is expressed by quantities of the magnitude of from 0.01 to 0.02 per cent. In experimental diabetic conditions there may be a decided increase in the amounts found in the tissues; yet the proportions retained in the body at any moment are at best small in comparison with those eliminated by the kidneys in the urine. On the other hand, the organs obtained from a patient who died in diabetic coma showed a decidedly increased accumulation of beta-oxybutyric acid in the organism, amounting to eight times the usual "normal" figures. The liver was found to be particularly rich in the acid.

It does not follow from this, however, that the liver necessarily is the the seat of formation of the beta-oxybutyric acid; for it is likewise conceivable that the latter is promptly carried to the liver from all parts of the body. Indeed, the distribution of beta-oxybutyric acid in many tissues rather favors the view that the capacity of forming it belongs to the general properties of all tissue-cells. The new facts regarding the actual extent to which such a compound can fail of further metabolism or elimination and thus remain as a menace to the organism which produces it, are in harmony with the serious consequences properly ascribed to the condition attended by severe ketonuria.—Jour. A. M. A.

He Came from Milwaukee

Theolog—My doctor says I have to take a tonic.

Medic—Why not try beer?

Theolog (shocked badly)—Oh, that's Teutonic.—Yale Record.

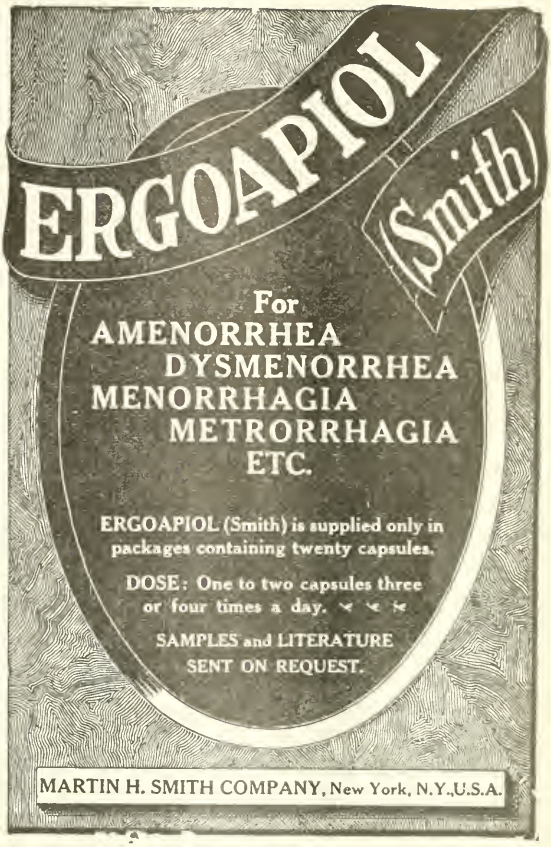
Influenza at St. Kilda.—The Glasgow Herald publishes a telegram received from Mr. Blair, purser of their Hebrides, who states that immediately after its last visit the islanders suffered an epidemic of influenza. Its severity may be inferred from the fact that had the steamer called a few days earlier there would have been no little difficulty in mustering a sufficient crew to bring a boat off. On one Sunday no service was held in the island church. St. Kilda lies some 250 miles out from Greenock, and bears 40 miles W. N. W. from the Isle of Monarch, the westernmost island of the Sound of Harris. The "cold" which attacks the natives after the visit of a stranger is mentioned by Kenneth Macaulay, great-uncle of Lord Macaulay, who wrote a history of St. Kilda. He says: "Another very remarkable disease that attacks this place occasionally is a very severe cold, sometimes attended with viscous bloody matter, every time the Harris people come among them, or strangers from any other quarter." A theory set forth in a letter from "a lady of Norfolk" to Dr. Burney, quoted by Boswell in his Life of Johnson, and attributed to "the late Reverend Mr. Christian of Docking," is that the situation of St. Kilda renders a northeast wind indispensably necessary before a stranger can land, and it is the wind, not the stranger, that causes the epidemic cold. In an account of a visit to St. Kilda, which appeared in the British Medical Journal of June 1, 1912, it is stated that Mr. McLean, who was then the minister, while admitting the fact of the periodical cold, scoffed at its connection with the landing of strangers as a superstition. But it is firmly believed in by the islanders, who do not welcome visitors, and are careful to keep their faces averted when speaking to them. This is probably a wholesome instinct of self-preservation, for it is easy to understand from the teachings of bacteriology what havoc is likely to be wrought by imported microbes in a population generally free from infectious disease.—Brit. Med. Jour.

Animal Cancer.—Leo Loeb and M. S. Fleisher, of St. Louis, report a continuation of their work on the action of certain substances on carcinoma in mice. First, they investigated the action of some inorganic substances; and secondly, the action of certain albuminous substances and also of a carbohydrate and a lipoid. Colloidal copper and colloidal plantinum both inhibited the growth of tumors during the injections. Colloidal sulphur, if active at all, is no more so than the above mentioned substances. On the other hand ionized salts of copper and of lanthanum had no effect on cancer. Combinations of proteid substances with copper are active. They also tested one organic substance, according to Morgenroth very active in preventing pneumococcus infection, namely, ethylhydrocuprein and found it inactive against cancer. "The following more complicated substances were tested: various preparations of casein and of nucleoprotein: furthermore, serum globulin, horse-serum, egg-albumin, Witte's peptone, protamin, gelatin, lecithin and starch. Of these various substances only the first two named, casein and nucleoprotein, were effective, while all the other substances were entirely inactive. One single intravenous injection of either of these two substances destroyed, in a large number of cases, a great part of a tumor. while repeated intravenous injections prevented the growth of the tumor during the period of injection. After cessation of the injections the growth started again in the majority of cases, either immediately or after a period of latency." The fact that another entirely different substance, leech extract, also acted on tumor growth like nucleoprotein and casein, but somewhat more strongly, seemed of great interest. It appears therefore, that of the various proteins, carbohydrates and lipoids so far tested, only the complex phosphorous-containing proteins are active. Of other substances only leech extract is active and among inorganic substances only colloidal metals. Very young tumors seem less easily influenced than those from nine to fourteen days old, intravenous injection only being effective. The authors also investigated the action of some of these substances on experimentally produced placentomas in the rabbit and guinea-pig. They found after the injection of casein some hemorrhages and subsequent necroses. Colloidal copper seemed to be without any effects on placentomas. With Dr. Leighton they examined the effect of casein and colloidal copper on wound-healing in white mice and saw no marked effect. They also injected a series of normal guinea-pigs intravenously with the same solutions tested in tumors and found that a single injection of nucleoprotein, casein, egg-albumin, and protamin frequently caused multiple necroses of the liver. Other substances like gelatin and starch do not seem to have this effect. There is apparently no absolute correspondence between the action of various substances on tumor and on the liver, moreover they have not been able to observe the necroses in the

liver of the mouse. The authors think it most probable that the substances found active in cancer of a mouse change the capillaries, increasing their permeability to various constituents of the blood. He had previously reported that intravenous injections of colloidal copper could cause partial retrogression of carcinoma in man in tumor of not too rapid growth. Further experiments in conjunction with Drs. Lyon, McClurg and Sweek showed that intravenous injections of solutions of casein also inhibited the growth in certain human cancers, and in one case of sarcoma of the humerus in man casein injection caused decided retrogression and partial calcification of the growth. Nevertheless, on account of the liver necroses observed in the guinea-pig after casein injections they suggest that it may be inadvisable to make use of such proteins in human beings at present.—Jour. A. M. A., June 14, 1914.

Hygienic rules for the summer should emphasize the necessity of avoiding the sunshine, and of wearing opaque clothing if we must be out. Nature generally selects yellow for animal coverings as it conceals and also reflects the rays. Black is the most comfortable in the shade as it radiates best and is used by nocturnal animals. Feathers are non-conductors and black is harmless to birds in the sun. White, of course, is best for sun exposure, providing the cloth is opaque like fur or feathers. Tropical birds are often white, and most of arctic animals and they all have unpigmented skins. In the tropics the white reflects the rays, but—the arctic check radiation of body heat and aids concealment. White horses, on the other hand, have black skins in sunny climates as the hair is too thin to exclude all light, and we too should have dark underclothes if we wear thin white outer garments in the sun in summer. Less fuel food is needed but we ought not to reduce the nitrogen, for we might need more in such exhausting conditions. The bowels must be free. Few drink enough water and all take it too cold. It is wrong to exercise as much as in winter, and it is best to rest in the heat of the day if the search for bread and butter permits. Above all else, tropical experience shows that hot baths are better than cold. There is entirely too much retinal irritation in summer, and if we are exposed to much glare, dark glasses are necessary—the blonder the person the darker the glass. Yellow, and green or combined yellow and green are the best because they exclude the harmful rays at each end of the spectrum and transmit the visual ones, thus permitting accurate vision without the strain of the dim light of smoked glass.—Amer. Med.

Ocular Findings and Longevity.—W. G. Posey, of Philadelphia, remarks that it seems extraordinary that life-insurance examiners do not oftener avail themselves of the aid given by eye examination as regards the indications of the existence of important morbid processes in the body. To determine the existence of a disease, he says, is one thing, but to draw deductions from one's ophthalmic findings regarding the life expectation of the individual is another. He, therefore, confines himself to the discussion of this point how far the morbid processes in the eye, symptomatic of disease elsewhere, enable one to draw conclusions as to the stage of advancement of that disease and to estimate the probable duration of life. He thinks it safe to assert that marked ocular disturbance from diseases elsewhere in the body indicates a development seriously threatening



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health and life. The discovery of hemorrhages in the retina, for example, when not of traumatic origin, in any adult, should always be considered as indicating a serious condition. As these occur usually in nephritis, he first takes up the ophthalmic findings in Bright's disease and gives the figures which can be deduced from the reported studies as regards their significance as to duration of life. The figures are certainly unfavorable, and death may be expected from one to three years in albuminuric retinitis. He agrees, however, with De Schweinitz that it is not unlikely that future statistics will show some improvement. A carefully regulated manner of living with the best of medical care may prolong life for many years. Of almost equal value to the examiner is the recognition of the ocular symptoms of diabetes which are many and varied. The most important are the changes in the ciliary muscle, the lens and the retina, which not infrequently are the first recognized symptoms of diabetes mellitus. The authorities differ as to the frequency of ocular symptoms in this disease, and perhaps Hirschberg's statistics are most trustworthy. He found diabetes present in from 1 to 2 per cent. of all his private cases and in a smaller per cent. in his hospital practice. Opinions differ also as to the vital prognosis, some authorities being pessimistic. According to Posey's experience, with proper care diabetics may live many years after the development of ocular lesions, and these may sometimes improve. Diabetic cataract is the one form of cataract that yields in any degree to inoperative measures. The ophthalmoscope may also give valuable indications in the retinal circulation, both as regards the conditions of the heart and also of the prospects of life. Lead, tobacco and alcohol often reveal their defects in the fundus oculi, and syphilis can affect almost all the eye structures. Tuberculosis has also its eye symptoms. The earliest symptoms of paresis are often ocular and may be of the greatest value in diagnosis. Aside from the question of life expectation, Posey thinks insurance examiners should give more attention to the degree of visual acuity as affecting the man's capacity for work. Even partial loss of sight may affect a man's earning capacity and the probability of a man's being able to pay his premiums. Defective sight frequently keeps people below the place where their abilities should place them and, while some are not crippled by it, insurance companies probably wish to be guided by the possibilities of the average man.—Jour. A. M. A., June 14, 1914.

History of Ginseng.—Ginseng never "caught on" to any extent in European medicine, but this was not because it was not known, and it did actually find a place in the Paris Codex and in many of our eighteenth century dispensatories, says the Chemist and Druggist. It appears to have been first referred to in English in 1654, in a translation of Martini's "History of the Conquest of China," in which it figures as "Gimsem, so much esteemed amongst the Chinese;" but the earliest description I have seen of the plant and its uses is in a translation of de La Laubere's account of Siam in 1688. It is, says the writer, who devotes a long paragraph to the subject, the most esteemed "of all the plants of the East;" the best grows in China, but it is not wanting in Siam; "the Root grows in the Shady Valleys, and some of them (the roots, I suppose, not the valleys) are found in the shape of Man." It is said to resemble our mandrake, but to be of stronger growth, and to its shape is due the name "Ginseng" image of man). A fuller account was published in the Philosophical Transactions of the Royal Society under the names "Ginzeng, Ninzen, or Nisi. Araliastrum Quinquefolii;" hence the drug got into our medical books. Tibet and the mountainous part of China are named as its geographical sources down till the latter half of the eighteenth century, when Healde says "it is also found in some parts of North America." In addition to its almost universal use in medicine in China the Tartars are said to drink a decoction of the leaves as tea; the roots also are so used, but "must be boiled longer." In Siam it was used as coca is by the Indians of Peru. "He that hath this Root in his mouth," says Loubere, "will hold out at one labor as long again as he that hath not."—Exchange.

Johns Hopkins Medical School Receives Large Endowment for Clinical Education and Research.—Delivery has recently been made at Baltimore of securities valued at $1,500,000 presented by the General Education Board to the Medical School of Johns Hopkins University. This gift is to be known as the William H. Welch Endowment for Clinical Education and Research.

The securities were accepted on behalf of Johns Hopkins Medical School by Mr. R. Brent Keyser, Chairman of the Board of Trustees. The actual transfer of the principal of this fund to Johns Hopkins University signifies that an important and novel feature relating to the gift will have become an accomplished fact, namely, that the organization of the Medical School should be so arranged that the entire income from this fund could be utilized for the support of full-time teaching and research departments of Medicine, Surgery, and Pediatrics, or diseases of children.

The express proposal made by the trustees of the Johns Hopkins University was that in reorganizing these three departments, professors and their assistants should hold their posts on the condition that they become salaried university officials, and that they accept personally no fees whatever for any medical or surgical services which they might render.

The hospital wards and out-patient departments are to be under the control of the university medical or surgical teachers, but over and above their work in the public wards, the teachers are to be free to render any service required in the interest of humanity and science. They are to be free to see any patient they desire to see.

Patients, however, of the usual private patient type, will pay a reasonable fee to the University, rather than to the professors personally. The time and the energy of the professors are to be fully protected, not only because their salary eliminates financial interest on their part, but because they are themselves to become sole judges as to whether or not particular cases shall or shall not command their personal attention.

In order that the time and energy of the professors thus safeguarded might be properly utilized under favorable conditions, the endowment was made large enough to provide adequate salaries to attract the ablest professors and also to provide them with assistants, well-equipped laboratories, books, and other necessary facilities.

Simultaneously with the completion of the reorganization of the Johns Hopkins Medical School in accordance with this new plan, the University trustees have chosen Dr. Theodore C. Janeway, hitherto Professor of Medicine at Columbia University, to become Professor of

Medicine of the Johns Hopkins Medical school, the position once held by Sir William Osler.

The chair of Surgery at Johns Hopkins, under the full-time arrangement, is to be occupied by Dr. William S. Halsted, most of whose surgical career has been passed in the Johns Hopkins Medical School, where, since the establishment of the Johns Hopkins Hospital, Dr. Halsted has been its Surgeon-in-Chief and Professor of Surgery.

The Chair of Pediatrics will be occuped by Dr. John Howland, who was called a year ago from the Professorship of Pediatrics at Washington University, St. Louis, and appointed physician in charge of the Harriet Lane Home for Invalid Children, this institution being the pediatric clinic of Johns Hopkins Medical School.

Johns Hopkins will become the first medical school to be placed upon the full-time basis in all departments. A grant of $750,000 has been made to Washington University, St. Louis, and of $500,000 to the Medical School of Yale University, upon an understanding that they also reorganize their work so as to put their clinical teaching upon a full-time basis.

The full-time scheme is a plan to ensure to hospital work and medical teaching the undivided energy of eminent scientists whose efforts might otherwise be distracted by the conflicting demands of private practice and clinical teaching. The full-time scheme is an appeal to the scientific interest and devotion of the clinician, and it is significant that the first three full-time posts created have been filled by men of conspicuous professional standing, all of whom have made great sacrifices in order that they might enjoy ideal conditions for clinical teaching and investigation.

It should become of increasing consequence to the public that the training of those studying to become doctors should be in charge of the most competent men obtainable devoting their entire time to this work. Greatly increased efficiency and thoroughness should result, to the alleviation of suffering and the cure of disease.

American Doctor Studies Typhus.—An American doctor, Clarence D. Ussher, has received hearty and public thanks from the vali of the Turkish vilayet of Van for his "humane zeal and care for the sick" in the recent epidemic of typhus among the Turkish soldiers quartered in the city of Van.

Van, the city, is the center of the Turkish provinces of the same name, in the northeastern corner of Asiatic Turkey. On its eastern border the vilayet joins Persia, while on the north it is very near the Russian Caucasus. The city is on the shore of Lake Van, a large sheet of water whose surface is 5,500 feet above tide level. The city is said to have been built by Semiramis, and strange and interesting inscriptions and carvings are found in and about it.

Since the American Board of Foreign Missions began work there the mission has been through war, famine, pestilence and massacre, and the epidemic of last winter will take its place in the history of calamities which Americans have helped the people to fight.

The Turkish military authorities were not insistent on cleanliness and sanitation, and after the epidemic started it made rapid headway so that over 2,500 soldiers are known to have died of the disease. Dr. Ussher was active wherever he was permitted to serve, but had not access to the barracks or to the military hospital. In the Board's hospital, however, and in going about among the sick in the camp and in the city he made careful study of the disease, and says:—

"We have proved very conclusively in our hospital that the only means of infection is vermin. Our nurses have been thoroughly exposed to every form of contagion from the breath, desquamation, discharges, constant association day and night, and all this in an over-tired condition, and not one of them contracted the disease. The typhus patients have been put in the same ward with surgical, pneumonia, dysentery, and even confinement cases, and not a single patient has become infected in the hospital.—Boston Med. and Surg. Jour.

The New Dress of the Annals of Surgery.—Owing to the continually increasing amount of material of value, offering for publication in the Annals of Surgery, the publishers have found it necessary beginning with the July, 1914, issue to enlarge the size of the page and also to somewhat reduce the size of type in which the original contributions have heretofore been printed. The enlarged size will also enable the publishers to make a better display of the illustrations which are such an important feature of the Annals' contributions.

The July issue has a choice collection of important articles of exceptional value to the general practitioner as well as the surgeon. It is a splendid example of the general excellence of this publication.

Mentally Defective Immigrants.—The problems encountered and the methods used to meet them in the examination of immigrants are described by M. H. Foster, Ellis Island, New York. There are two general methods used, first ascertaining the amount of their acquired knowledge and second, attempting actually to test their various mental activities. In the first, certain universal requirements are assumed such as are necessary to the immigrant's ordinary existence and occupation. There are other matters also that he should be conversant with, such as simple arithmetic, names of rulers, etc. This method is open to the objection, that we cannot even approximately estimate the previous environment. What we are likely to consider matters of universal knowledge may be absolutely unknown to the subjects on account of the limitations of their surroundings. It is hard to appreciate the narrowness of the lives of many of our immigrants. Their ideas, vocabulary and experiences are extremely limited and they are still more so in some of the Filipinos and Porto Ricans. A great deal of time has to be necessarily expended in trying to make standards for foreign nations and countries which are at best only relative. There are still other difficulties in the examination of other activities and testing how the subject will use his judgment or reason in meeting ordinary problems or emergencies. Superficial memory and attention can be tested by the cube test which is an important one and consists of placing four or five ordinary wooden blocks before the subject which the examiner touches in a certain order and has the subject repeat. A great many combinations can be made to test attention and memory in this way. Judgment and reason are so interwoven that they are best examined together, and many devices have been used, but none are perfectly satisfactory alone. Foster gives a number of the methods employed and discusses the subject of tests in general. The lack of constructive imagination is very suggestive of feeble-mindedness. A multiplication of tests without a definite and intelligent

idea of their psychologic basis only confuses. The power to count and figure to a limited degree is extremely important and should be thoroughly investigated in every case, counting backward and forward. Simple sums in addition and subtraction, copying simple geometric figures are also useful for immigrants. The careful study of the Binet-Simon scale is very useful. The physical and facial signs and special sense defects are not always reliable. Foster's summary is given as follows: "There is no one test for feeble-mindedness, and only by a routine examination of all the mental faculties can we make an accurate diagnosis. The amount of acquired knowledge and the capacity of the mental functions should both be measured. Physical signs and facial appearances are of but little use in picking out defectives. The examination should be conducted along scientific lines with a clear comprehension of the psychologic basis of all the tests employed.—Jour. A. M. A.

Cramps of Cholera Morbus.—The approaching season of heat, with its following train of stomach and intestinal diseases, emphasizes the proven value of Hayden's Viburnum Compound in Cramps of Cholera Morbus and Muscular Cramps.

H. V. C. is compounded only from selected material, depending for its therapeutic efficiency upon the recognized value of Viburnum Opulus and Dioscorea Villosa, combined with Aromatics.

Dr. Torald Sollman in his text-book "Pharmacology," page 510, recommends Viburnum Opulus in Muscular Cramps.

"King's American Dispensatory," page 2059, vol. 2, refers to this same product in like conditions.

Prof. Potter in his "Materia Medica, Pharmacy and Therapeutics," page 266, recommends the employment of Dioscorea Villosa in Cramps of Cholera Morbus, and Prof. Ellingwood in his text on "Materia Medica and Therapeutics," page 336, also advises its employment.

Hayden's Viburnum Compound presents Viburnum Opulus and Dioscorea Villosa in their most refined and active state and when given in hot water, a pronounced effect will be observed when employed in Cramps of Cholera Morbus and in Muscular Cramps.—N. Y. Pharmacal Co. Bedford Springs, Mass.

The giant-cell sarcoma of the long bones is relatively benign and, as Bloodgood has shown, is often curable by thorough curettage properly performed.—Amer. Jour. Surg.

Sexual Neurasthenia in Men.—The following are the conclusions of an article on primary sexual neurasthenia in males not dependable on the central and sympathetic nervous systems, by A. J. Underhill, of Baltimore. He reports six illustrative cases in detail. 1. Sexual neurasthenia is always due to definite pathologic conditions in the genito-urinary tract. 2. The lesions may be situated in any part of this tract. 3. Because of the exceptionally rich supply of sensory nerve-endings in the prostatic urethra, the changes in this part, especially in the vicinity of the verumontanum, are most apt to give rise to this type of neurasthenia. 4. The conditions give rise primarily to a local neuritis or neuralgia which is the intermediate cause of the neurasthenia. 5. There may be in certain instances a toxic element which reduces the resistance of the sympathetic nervous system. This is especially true of infections of the seminal vesicles or prostate. 6. The condition is most apt to occur in those of hereditary or acquired neuropathic disposition. 7. The physical impotence resulting in many of these cases acquires a psychic element in the course of the disease which must be dealt with as a separate entity after the removal of the primary cause.—Jour. A. M. A.

Service of Medicine to Civilization.—In his presidential address before the A. M. A. at its sixty-fifth session at Atlantic City, Dr. V. C. Vaughan, of Ann Arbor, took up the subject of the service of medicine to civilization. In ancient times, he says, civilization arose, grew for a few centuries and then declined. In all instances it was local. Relatively small bodies of men occupying salubrious regions developed the elements of science and for a few centuries flourished. They overcame their less fortunate neighbors; with conquest came infection and national decay. He reviews the histories of the Egyptians, the Greek and the Roman civilization all of which succumbed to malaria and pestilence introduced by captives. The plagues of the middle ages which kept Europe thinly populated for centuries are also reviewed. The claim that infectious diseases have benefited the race by destruction of the unfit is shown to be unfounded in fact.

Dr. Vaughan has himself combated it from his own experience in the Spanish war and he brings forward many proofs from ancient and modern history to support his views. A study of epidemics shows that in the presence of wide-spread contagion, mankind tends to revert to barbarism. Disease breeds immorality, ignorance and strife, and Vaughan holds that it is not extravagant to prophesy that with ten centuries of freedom from

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has proven highly effective in limiting the extent of the inflammation, in controlling bacillary development, and in relieving the painful symptoms attendant upon such inflammations. In addition to the above definite therapeutic powers, it should be remembered that GONOSAN'S value is further emphasized by its comparative freedom from those qualities—gastric and renal irritation—usually found in other balsamics.

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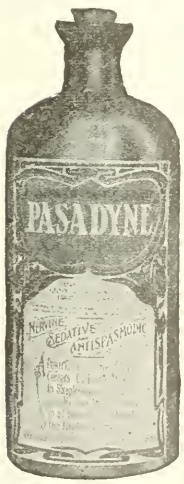
disease, inherited or acquired, the world would be regenerated and the superman be born. We need not turn to history for examples of the degenerating effects of disease. We see it to-day in the physical inferiority, intellectual weakness and moral irresponsibility of those people who are still under the shadow of malaria and kindred ailments. We have not yet got out of the shadows of the dark ages. Medicine consists in the application of scientific discovery to the prevention and cure of disease. Everything else is sham and fraud. The civilization of which we boast is still only partial, though science dominates the world more now than ever. No nation where conditions exist as they do at present can be given a clean bill of health, and there is much yet to be done before we approach this mark. All intelligent people must cooperate in hygienic measures. To permit disease or to transmit disease to offspring is unpardonable and to infect another one with disease is immoral. Vaughan goes at length into pointing out the ways in which medicine is a public service, though its work is done at a sacrifice by those who render the service. He notices the laws that are being enacted and that are proposed for the advancement of public health and the benefit of the race and gives his own ideas as embodied in the Michigan legislation. If preventive medicine is to do its best service, the time must come when every citizen will submit to a thorough medical examination once a year or oftener. The public health service is doing good work, but in each state there should be a hygienic laboratory and a board to use it for the study of sanitary conditions and the prosecution of scientific research. He closes with an appeal to the younger members of the profession who have the work before them and on whom the future of the race depends.

A Safe Soporific in Neurasthenia.—The danger of prescribing the ordinary opiates and hypnotics in neurasthenia, particularly in females, would be sufficient reason for preferring PASADYNE (Daniel) even if it did not possess a distinctive therapeutic value and one which entitles it to a place in the foremost rank of calming agents. It frequently happens that the need for a reliable soothing product arises in the management of a neurasthenic, and when it does there is no better choice than PASADYNE (Daniel). Samples may be had by addressing the laboratory of John B. Daniel, 34 Wall St., Atlanta, Ga.

Congenital Hemolytic Jaundice.—E. T. F. Richards and W. C. Johnson, of Minneapolis, publish a carefully reported case of this rather rare and little noticed condition, which brings out prominently its important features. These are jaundice, splenomegaly, diminished osmotic resistance of the erythrocytes, anemia with characteristic blood changes, and urobilinuria. These symptoms are rather elaborately discussed and the pathologic changes and theories of the disease noticed. Its true cause cannot yet be said to have been ascertained, but the generally held view is that its symptoms depend on excessive hemolysis. The view of Vaquez and Aubertin that the bilirubin circulating in the blood is produced by the liver cells as a result of an attempt to transform the excessive amount of pigment in the blood from the corpuscular destruction, has been largely favored. The gross and microscopic changes seem to correspond to the hemolytic nature of the disease. Treatment is unsatisfactory, though splenectomy is credited by some authorities as having good results. The patients though always jaundiced, it may be from birth, do not seem to suffer from it seriously and some of them have lived to a ripe age. Until we know more as regards its pathology and the function of the spleen in general, the authors think the wisdom of advocating splenectomy in any given case must necessarily be an open question. Treatment by the Roentgen rays has been tried by Lichtwitz, who reports no beneficial influence on the blood-pressure or size of the spleen.—Jour. A. M. A., Nov. 1, 1914.

Drug Treatment of Diabetes.—In the treatment of diabetes mellitus opium, of course, has long held first place among therapeutic agents. In the hands of many physicians Papine (Battle) has produced identical results with those derived from the administration of opium or codeine. The employment of small doses at the beginning, and thereafter increasing until the required effects are produced or until narcotic symptoms are exhibited, when the dose will be held stationary or reduced, is the practice usually followed.—Battle & Co., St. Louis.



Some Plain Facts About a Soporific.—For nearly forty years we have been making for the medical profession what we believe to be the ideal sedative, soporific agent, and the fact that its use at the hands of physicians steadily grows seems to be the best proof of its therapeutic value.

Until within late years we put this product on the market under the name of Daniel's Concentrated Tincture of Passiflora Incarnata, but pirates began counterfeiting and forced us to protect the reputation our product had earned, and accordingly we gave it the distinctive name, PASADYNE.

We grow our own plants on a large acreage, and have done so all these years. In the manufacture of our product we draw upon every pharmaceutical advance, for we want to maintain the highest possible standard for PASADYNE (Daniel).

Hundreds of able clinicians have proven to their own satisfaction that PASADYNE (Daniel) is equal in therapeutic power to the older somnifacients, and is free from their disadvantages. Whenever you need a sedative or a soporific, you may prescribe PASADYNE (Daniel) with the fullest assurance that it will produce the results you want. It will not fail you.

A sample bottle may be obtained by addressing the Laboratory of John B. Daniel, 34 Wall Street, Atlanta, Ga.

Aerophagy.—C. D. Aaron, of Detroit, says that in the main, the air-belchings which are a symptom of so many gastric disorders consist in the main of swallowed air. Swallowing air is a habit of neurotics, and we all swallow a little air in eating and drinking; but it is only when the quantity becomes excessive that it becomes of pathologic significance. Persistent air swallowing by gum chewers leads to aerophagy. Most patients would ridicule the idea that they are air swallowers, but in every case of persistent belching the physician's attention should be directed to this possibility. It aggravates pre-

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existing diseased conditions and it is itself the cause of uncomfortable symptoms such as, cardio spasm, dyspnea, tachycardia, etc. Aaron sums up his conclusions as follows: "1. Continued belching of gas for a considerable length of time indicates aerophagy. 2. All eructated gas consists in the main of atmospheric air swallowed in attempts to belch. 3. Aerophagy accompanies many neuroses and is a frequent symptom of functional and organic disease of the gastro-intestinal tract. 4. The presence of bile in the stomach contents, with eructations, is suggestive of aerophagy."—Jour. A. M. A.

ACUTE DERMATIC INFECTIONS.—The further spread of acute dermatic infections and relief of symptoms are secured in the majority of instances by the application of ECTHOL (Battle). Thus, in Erysipelas ECTHOL will be found of marked utility, as also in the usual dermatoses caused by contact with poison oak and ivy.—Battle & Co., St. Louis.

WHERE WAS HE?

A lady, whose husband had recently died, having faith in spiritualism, called on a medium, saying that she wished to talk with the spirit of her departed husband John. When all was in readiness she was told that John would now converse with her. This is the conversation:

She—John, John!

Spirit of John—Yes, Liza.

She—John, are you happy?

John—Yes, I am happy.

She—John, are you as happy as when you lived with me?

John—Yes, Liza; I am happier than I ever was on earth.

She—John, tell me what heaven is like.

John—I can't Liza; I'm not there.—Exchange.

DO NOT BE TOO EAGER in dilating a stricture. The probable traumatism may be followed by an instense engorgement blocking the canal and causing retention.—Urologic Review.

BORAX WILL PREVENT THE TYPHOID FLY FROM BREEDING.—As a result of experiments, the specialists of the Department of Agriculture have discovered that a small amount of ordinary borax sprinkled daily on manure will effectively prevent the breeding of the typhoid or house-fly. Similarly, the same substance applied to garbage, refuse, open toilets, damp floors and crevices in stables, cellars or markets, will prevent fly-eggs from hatching. Borax will not kill the adult fly nor prevent it from laying eggs, but its thorough use will prevent any further breeding.

The investigation, which included experiments with many substances, was undertaken to discover some means of preventing the breeding of flies in horse manure without lessening the value of this manure as a fertilizer for use by the farmer. It was felt that if some means of preventing the breeding of flies near a human habitation could be devised, the diseases spread by these filthy germ carriers could be greatly reduced. While the "Swat the fly campaign," traps and other devices for reducing the number of typhoid-carrying flies are of value, they are of less importance than the prevention of the breeding. It was realized, however, that no measure for preventing the breeding of flies would come into common use unless it was such that the farmer could use it on his manure pile without destroying its usefulness for growing plants, and without introducing into the soil any substance that would interfere with his crops.

As a result of experiments carried on at the Arlington Farm, in Virginia, and New Orleans, La., the investigators found that 0.62 of a pound of borax, or 0.75 of a pound of calcined colemanite (crude calcium borate) would kill the maggots and prevent practically all of the flies ordinarily breeding in eight bushels of horse manure from developing. This was proved by placing manure in cages and comparing the results from piles treated with borax and from untreated piles. The borax, it was found, killed the fly-eggs and maggots in the manure and prevented their growth into flies.

In the case of garbage cans or refuse piles, two ounces of borax or calcined colemanite, costing from five cents a pound upward according to the quantity which is purchased, will effectually prevent flies from breeding.

While it can be safely stated that no injurious action has followed the application of manure treated with borax at the rate of .62 pounds for eight bushels or even larger amounts in the case of some plants, nevertheless borax-treated manure has not been studied in connection with the growth of all crops, nor has its cumulative effect been determined. It is therefore recommended that not more than fifteen tons of the borax-treated manure should be applied per acre to the field. As truck growers use considerably more than this amount, it is suggested that all cars containing borax-treated manure be so marked, and that public health officials stipulate in their directions for this treatment that *not over .62 (62/100) of a pound for eight bushels of manure be used*, as it has been shown that larger amounts of borax will injure most plants. It is also recommended that all public health officials and others in recommending borax treatment for killing fly-eggs and maggots in manure warn the public against the injurious effects of large amounts of borax on the growth of plants. Purchasers of manure produced in cities during the fly-breeding season should insist that the dealers from whom they purchase give them a certified statement as to whether or not the manure in the particular car or lot involved in the purchase has been treated with borax.

In feeding to hogs garbage that contains borax care is also recommended, especially when the animals are being fattened for market. Borax is not a very poisonous substance, and the feeding of garbage that contains it to hogs is not likely to be a serious matter. On the other hand borax in large quantities does produce gastric disturbances, and for this reason a certain amount of care is advisable.

The method for using this substance in the case of stables is to sprinkle the borax or colemanite in the quantities given above, by means of a flour sifter or other fine sieve, around the outer edges of the pile of horse manure. The manure should then be sprinkled immediately with two or three gallons of water to eight bushels of manure. It is essential, however, to sprinkle a little of the borax on the manure as it is added daily to the pile, instead of waiting until a full pile is obtained, because this will prevent the eggs which the flies lay on fresh manure from hatching. As the fly-maggots congregate at the outer edge of the manure pile, most of the borax should be sprinkled there.

Crude borax costs about six cents per pound in 100-pound lots in Washington, and it is estimated that at this rate it would cost only one cent per horse, per day, to prevent all breeding of flies in city stables. If calcined colemanite is purchased in large shipments, this cost should be considerably less. At the same time, if the borax is used on the manure only in the proportions stated, its value for use in the garden or for sale to farmers will not be lessened.

In view of this discovery, there now seems little excuse for any horse owner or resident of a city allowing typhoid flies to breed in his stable or garbage can.

It is believed that this information will greatly help the health authorities in their campaign against the typhoid fly. The health authorities have long tried to prevent the breeding of flies in city stables through the use of iron sulphate as a larvacide. In the case of iron sulphate, however, a large amount is required, and other insecticides such as paris green or potassium cyanide, while effective in killing the flies, are very expensive or extremely poisonous. Borax, which is used freely in most households, and is readily available in all parts of the country, has the advantage of being comparatively non-poisonous and non-inflammable, readily soluble in water and easy to handle. It can be purchased at retail for ten cents a pound, and a single pound used as directed in a garbage pail or open toilet may prevent the breeding of hundreds of dangerous flies.

The details of the experiments with borax and other larvacides will be found in United States Department of Agriculture Bulletin No. 118.

THE MAGGOT TRAP A POSSIBLE SOLUTION OF THE FLY PROBLEM.—A trap to destroy the maggots of the typhoid or house-fly before they develop into winged insects, is a possible solution of the fly problem, and one that should interest health officers, sanitarians and others who might make use of it on manure heaps, where this common pest breeds. The Department of Agriculture's scientists in their preliminary experiments with such a trap have succeeded in destroying from 70 to 99 per cent. of the maggots in a pile of manure. This method of attack differs from those which have been generally

used. Fly poisons have been made to tempt the appetite of the adult fly, or fly-tight receptacles have been used to keep the adult female from laying her eggs in manure. The newer method is based on the knowledge of certain habits of the undeveloped fly-maggot.

The maggots of the typhoid fly, it has been discovered, have a habit of migrating from their breeding places into drier portions of the manure heap. This seems a distinct move on their part to permit the adult fly to issue from the refuse in the easiest and quickest manner. The efficiency of the new trap is based on the regularity of this deep-seated habit.

The experiments of the department's entomologists showed that with the trap from 98 to 99 per cent. of all the maggots in the manure pile were destroyed, if the manure was kept moist. From comparatively dry manure about 70 per cent. were destroyed.

These experiments, as yet, have been tried only on a comparatively small scale. The question immediately arises whether the trap, which appears so successful on a small scale can be adapted to the handling of manure in a practical way on a large scale. Every consideration points to the probability that it can and that it will afford "an additional weapon of great value." However, the final verdict as to the value of the maggot trap must wait upon the solution of certain practical problems. To point out some of these here is to suggest lines for further investigation.

Don't play at anesthetizing the urethra by depositing tablets into it. If you want to do a cystoscopy with fair comfort to the patient, use either a moderately strong aqueous solution of one of the less toxic local anesthetics or an Irish moss preparation to which an anesthetic has been added. Did you ever have a cystoscope passed on you?—Urologic Rev.

Notes on the French Revolution.—In the May number of Aesculape Dr. Jean Avalon gives particulars as to some women condemned to death during the Revolution who pleaded for respite on the ground that they were with child. The reader may be reminded that during the Reign of Terror nearly 400 women were guillotined in Paris alone. Many of these were young girls. The Archbishop's palace was transformed into an infirmary for prisoners, which they only left for the scaffold. There were four doctors. One, Théry, visited all the patients in twenty-five minutes; his treatment was as simple as that of Sangrado, for his only prescription was *tisane*. He was succeeded by Enguchard, who appropriately was a pitiless bleeder. Another, Naury, applied himself zealously to the evacuation of what Rabelais calls the "pecuniary impostume." It is pleasant to hear that there was one of these men, Bayard, who not only did all he could to soften the lot of the prisoners, but tried to snatch them from the hands of the executioner. To that sinister infirmary were sent the condemned women who pleaded pregnancy. If on examination they were found to be really with child, a respite was granted till after delivery, when they were sent to the scaffold. Is it surprising that some women pretended to be pregnant in the hope of getting a further lease of life? or that others did their best to play the part of Renan's Abbesse de Jouarre with the help of an improvised lover? The Princess Lubomirska induced the Abbé de la Trémouille to consent to create within her a life that should save her for a time from death. An assignation was made in the bathroom, but the guardain of the place proved to be incorruptible. The whole story was at once told to Fouquier-Tinville, and the next day the obliging Abbé was sent to the guillotine, where he was soon followed by the unfortunate lady whom he had tried to save. Other women went through the preliminary rites, often with unknown men whom they paid for their services, but without securing the desired result. It is a terrible story of shame and despair. After a time the tribunal ceased to pay any attention to medical certificates, and sent to the scaffold women actually certified to be pregnant. Meanwhile, Fouquier-Tinville and his satellites prosecuted a butcher who was said to have killed a cow with calf for conspiracy to exterminate the species!—Brit. Med. Jour.

Before attempting to pass an instrument of whatsoever sort through an old and tight stricture in an urethra with which you are not familiar, make an examination preferably with an aero-urethroscope. In this way you can determine the approximate calibre of the urethra, presence of false passages, etc.—Urologic Rev.

Megaliths.—Nearly everything in the animal, vegetable, or mineral kingdoms plays a part in medical folklore. Naturally megaliths, which were objects of worship, are credited with healing powers of one kind or another. One of the most curious superstitions connected with them is the treatment of whooping cough by dust or particles rubbed off these ancient monuments. It has lately been referred ti by Dr. Marcel Baudoin, who, as quoted in the Nord Médical of May 10, says it is difficult to say how far back in the world's history the belief goes, but he thinks it evidently dates from a later period than that of polished stone. The megaliths could scarcely have been looked upon as possessing miraculous properties by those who set them up. We do not find this argument convincing in face of the fact that men who, with their own hands, have fashioned idols or statues of saints or amulets, must often have believed that the divinity or healing power was infused into the images or charms after they were made. Dr. Baudoin, however, thinks it likely that it was the people of the metal age who, finding monuments traditionally believed to be representations of deities, straightway endowed them with miraculous properties. In seeking a cure for whooping cough a pilgrimage was made to the stone from which a cure was expected. The pilgrims took with them a hammer or a hard stone, with which small fragments were chipped off, usually from the same points, and, together with the dust, carried away. The chips were placed in little pouches and hung round sick children's necks; the dust boiled in water was given as a *tisane*. Sometimes the little patient was rubbed against the megalith.—Brit. Med. Jour.

Incidental Case

Dr. Rubetinker was a qualified M.D., but, settling in a cattle country and finding the demand strong, he had added veterinary work to his other practice.

"Nothing serious," announced the doctor, after examining a valuable bull which he had been summoned post-haste to treat. "Give him one of these powders in a quart of bran mash three times a day."

The rancher heaved a sigh of relief. "Wait," he said, as the M.D., V.S., was about to leave. "I reckon, as long as you're here, you might as well have a look at the old woman. She's been ailin' for a month or two."—Judge.

MERCK'S ARCHIVES

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FOR THE GENERAL PRACTITIONER

PRESENTING A

REVIEW OF THERAPEUTIC PROGRESS

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THERAPY OF CHINEONAL

By W. C. Wolverton, M.D., of Badger, Iowa

RECENTLY my attention was directed to a new therapeutic agent known as chineonal, which, according to Prof. H. Winternitz, of the University of Halle, Germany, is a true chemical compound of approximately one part of veronal with two of quinine.

In a paper contributed to the "Medizinische Klinik" (Berlin), a short time ago, Winternitz relates briefly his clinical experiences with chineonal, and makes several claims for the remedy, viz.: (1) It does not irritate the gastrointestinal mucosa. (2) In influenza, typhoid fever, and in other conditions where restlessness and pain, or delirium, are associated with fever, chineonal adds the sedative effect of veronal to the antipyretic action of quinine; and that this combined action is more pronounced from the compound than that obtained from a simple mixture of its two components. (3) It is a general nerve sedative, and relieves neuralgia. (4) It is a logical remedy for pertussis, as here we have both a sedative and an antiperiodic; furthermore, quinine has long held a place in the treatment of this the bête noir of physicians. (5) Sea-sickness is also mentioned as seeming to furnish another indication for the exhibition of chineonal, because of the sedative action of the veronal content, and the local anesthetic effect of the quinine on the gastric mucosa.

While my experience with the remedy has been limited, the results obtained from its administration in suitable cases have been most gratifying. I therefore append the following case-reports:

Case 1.—J. H. Male. Age, 18 years. Farmer. Acute follicular tonsillitis, with threatened lobar pneumonia; fine rales, and slight percussion dulness over left lower lobe. This patient has in the past had three attacks of lobar pneumonia, and it was because of the fear of an impending attack of the same disease that the writer was called in the present instance. At 6 p. m., February 10, temperature was 104.2; pulse, 122; face flushed; physical signs as above noted. Chineonal, 3 grains, and aspirin, 5 grains, were administered, q. 3 h. Amorphous aconitine (Merck) and veratrine, āā 1/128 grain were given every half hour, for six doses; then every hour, for six doses; then q. 2 vel 3 h., p. r. n., to control the fever, and to re-establish circulatory equilibrium. Calomel and sodium bicarbonate were given, to unload the bowels, and provide a clean gastrointestinal mucosa for the absorption of medicinal remedies. Next day, at 11 a. m., temperature was 100.4; pulse, 100; pulmonary signs had cleared up; and the patient was feeling quite comfortable. Two days later the patient was up and about the house.

In this case, the relatives of the young man confidently expected pneumonia, and so did the writer; but it was averted. Just what part the chineonal played in the recovery it is hard to determine, since several other remedies (among them, I almost forgot to state, being a mixed stock bacterin containing polyvalent strains of the pneumococcus and streptococcus) were coincidently exhibited.

Case 2.—J. M. J. Male. Age, 30 years. Minister. Influenza in severe form; a mixture of the respiratory and nervous types. Here, again, I was called because the patient feared pneumonia. He had undergone an operation for duodenal ulcer a few months before, gastrojejunostomy being done at that time, and was still in a weakened condition. This patient was extremely nervous, continually tossing about in bed, complaining of severe backache and headache. It was in this case particularly that the sedative action of chineonal was manifested. The remedy was given in doses of 3 grains, q. 2 h., during the first day, and at four-hour intervals thereafter. The chineonal was retained from the beginning of treatment in spite of the fact that there had been severe nausea and vomiting. On February 15, at 11 a. m., the time of my first visit, the temperature was 103.0; pulse, 80

(this patient's normal pulse is about 60 per minute). At 8.30 p. m. of the same day, the temperature was 101.2; pulse, 72; the patient was much quieter, and was reasonably free from pain. At 11 a. m. of February 16, temperature was 98.2; pulse, 60; the patient was comfortable, and in the afternoon got up and dressed. Here was a severe case of influenza "jugulated" within twenty-four hours.

In this case, aspirin and veratrine and amorphous aconitine (Merck) were also administered, but the remarkable sedative action must be attributed to chineonal. I believe the special field of this remedy is in the treatment of influenza.

Case 3.—E. H. Male. Age, 18 years. Farmer. This young man had been for several days hauling ice, becoming overheated while putting a heavy load of ice on his wagon, and then riding several miles sitting on the ice. Result, lobar pneumonia. He became ill about noon of February 14, but would not consent to the calling of medical aid until next day noon, at which time his temperature was 104.0; pulse, 118; systolic pressure, 130 Mm.; diastolic pressure, 90 Mm. At this time the patient had a very aggravating cough, the expectoration being scanty, viscid and blood-streaked, and showing an apparently pure culture of the pneumococcus. There was severe pain in the left side of the chest, over the lower lobe of the lung, which the physical signs showed to be undergoing consolidation.

A dose of a polyvalent stock bacterin containing the pneumococcus and streptococcus was administered subcutaneously, chineonal, 3 grains, and aspirin, 5 grains, were given, q. 2 h., for six doses; then the same dose at three-hour intervals for six doses; thereafter, q. 4 h. One-half milligramme each of veratrine and amorphous aconitine (Merck) was given every half-hour until six doses had been administered; then every hour for six hours; then q. 2 vel 3 h., p. r. n., to lower temperature, diminish pulse-frequency, dilate the peripheral arterioles, and thus lower the blood-pressure and relieve pulmonary congestion; in other words, re-establish circulatory equilibrium. The bowels were emptied by the employment of calomel and sodium bicarbonate.

At 9.30 p. m., that same day, I found a very marked improvement in all the symptoms; the patient was sleeping when I arrived. Temperature was then 103.0; pulse, 98. Next day, at 8 a. m., the father 'phoned me that the temperature was 99.1. When I saw the patient at 2.30 p. m., temperature was 98.2; pulse, 70; systolic pressure, 90 Mm.; diastolic pressure, 70 Mm. The pneumonia was "jugulated," or "aborted," as you please, within twenty-four hours from the instituting of treatment; and that after the pneumonic process had been active over twenty-four hours before any treatment whatever was applied to the case.

At 10.30 a. m., February 17, temperature was 98.0; pulse, 66. At this time fine rales could be heard over the affected lobe, showing beginning resolution. Respiration was easy and of normal rate; pleural pain gone.

The patient sat up in a chair on February 18. On the 19th he walked about the house. On the 20th, *six days after the onset* of the disease, the "patient" attended a social gathering at a school-house four miles from his home, without harmful consequences.

In this case a number of remedies were employed, so that it is hard to decide how much credit is due the chineonal; however, it certainly did good service in its sedative action on this patient, who is nervous and high-strung.

Case 4.—Mrs. A. E. H. Age, 24 years. La Grippe. On February 20, she was given chineonal, 3 grains, and aspirin, 5 grains, q. 3 h. Next evening she was so much improved that she was able to attend a "church supper."

Case 5.—C. S. Male. Age, 30 years. Farmer. For some time had a "cold" he could not get rid of by the use of home remedies. On February 24, he was given tablets, each containing 3 grains of chineonal, and others containing 5 grains aspirin, with directions to take one tablet of each kind, every four hours. He was also given calomel and soda and some cough tablets, containing heroin, ammonium chloride and squill. A very few days sufficed to cure the "cold."

Case 6.—Mrs. J. Age, 24 years. Wife of patient in Case 2. Influenza, with a distressing cough. She was given exactly the same treatment as in Case 5. The patient made a speedy recovery.

Case 7.—Mr. T. Age, 50 years. Traveling insurance agent. Severe trifacial neuralgia, a sequel of influenza. Chineonal, 3 grains, aspirin, 5 grain, and acetphenetidin, 4 grains, q. 3 vel 4h., p. r. n., gave immediate relief, and within three or four days a cure was effected.

Case 8.—R. P. Male. Age, 17 years. Farmer. Influenza, complicated by acute otitis media. The same treatment as that used in Case 7 relieved the pain, but the otitis went on to suppuration, and a paracentesis of the drumhead was done, and a mixed stock bacterin administered. Then the aural trouble rapidly cleared up.

Case 9.—Isabel P. Age, 19 years. Sister of patient in preceding case. Severe influenza, of the respiratory type. Chineonal and aspirin quickly relieved the aches and pains of the "grippe," but the cough lasted for several weeks.

Case 10.—Mrs. S. Age, 68 years. Widow. "Grippe" of the gastrointestinal type, with much nausea and vomiting. In spite of the gastric disturbance, the patient retained the chineonal, which had a noticeably sedative action on the gastrointestinal mucosa. The vomiting stopped, and she began taking and retaining nourishment within a couple of days. A coincident intercostal neuralgia was also quickly relieved.

Case 11.—Mabel P. Age, 15 years. Sister to patients in Cases 8 and 9. Acute follicular tonsillitis. There was much nausea and vomiting; severe headache and backache; first seen April 3. Chineonal, 3 grains, and aspirin, 5 grains, were given q. 3 h. Calomel and sodium bicarbonate were also administered. When next seen, twenty-four hours later, the nausea and vomiting had disappeared; headache and backache had ceased; the throat felt much better, and the patient felt generally quite comfortable.

Now, as was remarked in the early part of this paper, this is a short series of cases from which to draw conclusions; yet the peculiar effects of chineonal were so manifest in a number of cases in which the remedy was exhibited, that one must conclude that in chineonal we have a valuable remedial agent when used in its own peculiar field, as outlined by Prof. Winternitz, and quoted at the beginning of this paper.

TREATMENT OF RECURRENT SIBILANT BRONCHITIS*

By B. K. Rachford, M.D.

It is my belief that the symptom groups commonly described in medical literature under the titles, Migraine, Recurrent Vomiting, Recurrent Sibilant Bronchitis, Recurrent Coryza, Asthma and Urticaria, as they occur in children, are, as a rule, closely related food intoxications which can be successfully treated by very much the same dietetic and medical treatment.

In a paper read before this society in 1897, I expressed very much the same views that I am reiterating to-day. In that paper, under the title "Lithemic Vomiting," I reported cases which are now known as recurrent vomiting and called attention to the fact that recurrent vomiting attacks may not infrequently, as the child grows older, be transformed into attacks of true migraine. In the seventeen years which have intervened I have become more than convinced that the clinical statement I then made is true. In that same paper I spoke of the toxic dyspnea which may be present in these cases. I also described in these cases acute gastrointestinal attacks associated with diarrhea, which recur without apparent cause at more or less regular intervals, and hazarded the belief that the diarrhea in these cases was eliminative and therefore a curative symptom. At the same time I also expressed the belief that urticaria might be an expression of these same autointoxications.

In 1909 Dr. Frederick A. Packard, under the title "Urticaria of Mucous Membranes," presented to this society the then existing clinical evidence of the mutual relations of asthma and urticaria.

Dr. Charles Gilmore Kerley has for a number of years been especially interested in the close etiological relationship which exists between the above-named symptom groups and has insisted that the treatment of all of these disorders should be along similar lines.

It is not my purpose at the present time to express an opinion as to the character or the method of action of the various toxins which may bring about the above-named symptom groups. The special objects of this paper are:

First.—To call attention to the clinical fact that recurrent rhinitis and recurrent sibilant bronchitis, which are sometimes associated with rather severe asthmatic attacks and almost always with a severe paroxysmal cough are very commonly caused by some kind of food intoxication.

Second.—To direct attention to the fact that recurrent attacks of rhinitis and whistling bronchitis, which is one of the most common symptom groups the physician is called upon to treat, may be in most instances almost or quite relieved by dietetic treatment.

Third.—To insist that this symptom group occurs not infrequently in children who have a predisposition to migraine, recurrent vomiting and urticaria. In the case histories given below this relationship is shown.

TREATMENT OF RECURRENT RHINITIS, RECURRENT SIBILANT BRONCHITIS AND ASTHMA IN THE CHILD

Dietetic Treatment of Attack.—During the attack sweets, butter fats, eggs and raw fruits are especially to be avoided. Strawberries, rhubarb, tomatoes, salads, shellfish, tea, coffee, pastry, gravies, cream, cod-liver oil and alcohol are excluded from the diet. If it be necessary to sweeten the cereals and cooked fruits which the child eats, saccharin is to be used for this purpose instead of sugar, and while the patient is not to have butter, skimmed milk may be allowed. Eggs in every form, even in cooked foods, are to be carefully eliminated from the diet, and among the raw fruits, oranges are to be especially avoided.

The following foods may be allowed: beef, mutton, fowl, and fish in moderation, cereals, bread, all vegetables not above proscribed, cooked fruits, skimmed milk and thick soups.

Interval Dietetic Treatment.—About two months after the patient has recovered from the attack the above diet may be carefully modified by adding one egg a day to the diet, then perhaps two weeks later, milk containing 4 per cent. fat may be substituted for skimmed milk. Some few weeks later all raw fruits, oranges excepted, may be added to the diet. Some weeks later, small quantities of sugar may be used for sweetening cereals and stewed fruits. After five or six months the child may return to his original diet with the exception that he must eat sparingly of sweets and must eat nothing between meals. If the symptom group returns on the addition of any article of diet that particular food is to be permanently excluded from the diet.

Hygienic Treatment.—During the attack the patient is to have all the outdoor air he can get with as little exercise as possible; this can be obtained on sleeping porches and with wide-open windows. As

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he recovers from his attack, exercise in the open air is advisable. It is especially important that school children, who must necessarily spend a portion of their day in the close atmosphere of the schoolroom, should have all of the air possible at night.

Medical Treatment of the Attack.—During the attack, constipation should be relieved by some of the magnesium salts[1]. The milk of magnesia or calcined magnesia are especially suitable for this purpose. Sulphate of magnesia may be used in small doses in older children.

Alkalies in the form of sodium bicarbonate, potassium bicarbonate or potassium citrate should be given in fair sized doses three or four times a day. Sodium bicarbonate may be given for example in 5-grain capsules three or four times a day, or the same size dose of potassium citrate may be given in solution. In younger children who object to the taste of sodium bicarbonate I commonly direct the mother to distribute through the child's food a teaspoonful of this salt each day.

Tincture of belladonna should be given for a short time in 2 to 4 minims doses three times a day.

Interval Medical Treatment.—If constipation cannot be controlled by diet some form of cascara or other palatable laxative should be used as indicated. The belladonna is discontinued, but an alkali in some form should be given for six or eight weeks. Sodium bicarbonate is the best alkali for this purpose and may be given in moderate sized doses once or twice a day.

The above treatment, if faithfully carried out, will in almost every instance control the syndrome above described. This treatment is almost or quite as effective in the treatment of migraine and recurrent vomiting in children. In the adult and older child, I continue to use in the treatment of migraine the formula which I originated twenty years ago, and which has been published many times. It is as follows:

Sodii Sulphatis (dry)	grn. xxx
Sodii Salicylatis (from wintergreen)	grn. x
Magnesii Sulphatis	grn. l
Lithii Benzoatis	grn. v
Tinct. Nucis Vomicæ	gtt. iij
Aquæ Destil	ad. f. ℥iv

This prescription is put up in siphons and charged with carbonic acid, and the patient is directed to take, half an hour before breakfast, a sufficient quantity to produce at least one bowel movement during the morning. This prescription is a remedy of great value in the preventive treatment of migraine; it may, in fact, replace all other medication.

[1]Martin Fischer has taught us that the magnesium salts when given with such alkalies as soda and potash help to fix these alkalies in the tissues.

Case 1.—Male, age ten. Family history good, except mother has migraine; two other children are well. Patient began to have attacks of recurrent vomiting when two years of age. For a few years these attacks were frequent and severe and were accompanied by a severe acidosis. Acetone and diacetic acid were found in the urine on first day of attack and continued until after the vomiting ceased, somewhere between the fifth and ninth day of the attack. Up to the time he was five years of age, these attacks grew more frequent and more severe and his general physical condition was far from satisfactory. He was thin, undersized and lacked strength. He suffered frequently from rhinitis and bronchitis. After five years of age his attacks of recurrent vomiting were less frequent and less severe. Between seven and ten years of age he did not suffer from recurrent vomiting, but during this time he had frequent attacks of bronchitis, characterized by severe coughing and by whistling râles.

September 15, 1913, he became ill with a severe coryza, mild pharyngitis and whistling bronchitis. He had fever and was put to bed. He was given five grains of potassium citrate and two grains of tincture of belladonna. For six weeks he continued to manifest the symptoms incident to coryza, pharyngitis and bronchitis. At times he had no fever, little cough and seemed on the point of convalescence, when suddenly, without apparent cause, there would be an acute exacerbation of all his symptoms and he would go to bed again as ill as before. During this time he had careful local treatment of the nose and throat and such internal treatment as his general symptoms demanded. The internal treatment consisted largely of tincture of belladonna and some alkali. On November 1st he suddenly developed a violent urticaria. His body was covered with large red urticarial wheels. He suffered intensely from itching, he was sick at his stomach, his breath had an acetone odor and his urine contained acetone and diacetic acid. Coincident with the development of the urticaria, his coryza, pharyngitis and bronchitis disappeared.

As I studied the various symptom groups which this patient presented during his illness, I became convinced that he was suffering from some kind of food poisoning and that these poisons, whatever might be their nature, by their action on different parts of the vasomotor nervous system, produced from time to time the symptoms of recurrent vomiting, recurrent coryza, recurrent bronchitis and urticaria.

Acting upon this hypothesis I placed the patient on the following treatment: I excluded from his diet all sweets, including sugar, all butter fats (including milk), eggs in every form and raw fruit juices, especially oranges. He was allowed soups, cereals, meat, bread and vegetables. The medication consisted of a teaspoonful of bicarbonate of soda every four hours and a sufficient quantity of milk of magnesia to keep his bowels open. Under this treatment he commenced to improve at once and was well within the week. From that time until the present writing, a period of four months, he has been kept practically upon the same diet and has remained perfectly well.

Case 2.—Male, age eight. Family history: paternal grandmother died of tuberculosis, father has hay-fever, mother suffers from migraine. Two other children in the family are well and show no tendency to hay-fever, asthma, or autotoxic attacks.

Patient is a boy of fair physical development. He enjoyed good health until eighteen months

ago, when he developed a whistling asthmatic bronchitis, from which he suffered more or less for nine out of the subsequent twelve months. During this time he had more or less severe attacks of asthmatic bronchitis characterized by great difficulty in breathing and incessant coughing; these symptoms were worse at night. From these severe attacks he would, after a short time, sufficiently recover to return to school. But during all of this time, even when he was well enough to go to school, he continued to have whistling râles and a more or less irritating cough with shortness of breath on exercise. He lived in the open air and slept on a sleeping porch during all this time. During the summer of 1913 he had an attack of what his parents believed to be hay-fever. During this time, the last three weeks of August, he suffered severely from asthma. Following this attack in August he remained in comparative good health until the middle of October, when again he suffered severely from a whistling bronchitis, associated with an irritable and paroxysmal cough, and both night and day his breathing was labored and his chest was filled with whistling râles.

When I saw him for the first time on October 29, 1913, he was suffering as above described. With his asthmatic symptoms, however, he had no fever and so far as I could learn, his attacks had always been afebrile, except when complicated by influenza during a household epidemic of this disease.

Treatment.—The treatment was the same as in the preceding case—sweets, butter fats, eggs, oranges and all raw fruits were eliminated from his diet. He was given bicarbonate of soda three times a day and in addition five grains of potassium citrate and two minims of tincture of belladonna. This boy was allowed skimmed milk, bread without butter, cereals without sugar or cream, all meats and vegetables and certain cooked fruits. His cereals and cooked fruits were sweetened with saccharin.

Six days later this boy was absolutely well and his general appearance was much improved. The diet and bicarbonate of soda was continued and the boy returned to school and continued to sleep as he always had done in the open air at night. He remained perfectly well until Christmas week, a period of about two months, when he went off his diet, eating sweets, eggs, butter fat and raw fruit. Within four or five days all of his asthmatic symptoms returned. He was again placed upon the same treatment as before, and he as quickly recovered, returning to school perfectly well after the holiday vacation. He remained perfectly well again for two months, and then again went off his diet, with the result that the asthmatic symptoms again returned. These asthmatic symptoms lasted only a few days after he was again placed upon his diet. From that day to the present he has continued his diet and remained quite free from asthmatic symptoms.

Case 3.—Female, age four years. When five months old she had an attack of whistling bronchitis associated with a severe paroxysmal cough and during the attack vomited a number of times. This attack lasted about three days. She had similar attacks at the ages of thirteen months, fourteen months, seventeen months and two years. From that time on during the past two years her attacks have been more severe and more frequent. During the winter of 1912-13 she had nine quite severe attacks within seven months, and during the summer of 1913 these attacks occurred about a month apart. Last August she had a very severe recurrent vomiting attack associated with a wheezy bronchitis and a severe paroxysmal cough. This attack lasted six days, and during this time almost nothing was retained on the stomach. She had similar attacks September 20 and October 20, 1913.

November 16, 1913, she began to cough and quickly developed a severe whistling bronchitis with such alarming symptoms that her parents thought she would die from suffocation during the night. On the 17th the cough was somewhat less paroxysmal and the asthmatic symptoms less severe, but at this time she became sick at her stomach and vomited frequently during the afternoon and night of the 17th; in fact, nothing stayed on her stomach for twenty-four hours.

On November 18th I saw her for the first time and obtained the above history, and I also learned that in the intervals between the attacks above described she was at no time entirely free from cough, and had most of the time whistling sounds in her chest.

When I saw her she was suffering from a whistling bronchitis with marked difficulty in breathing, but the persistent vomiting had apparently subsided. The mother made the observation that during her attacks she suffered either from severe vomiting or from great difficulty in breathing. When the vomiting was severe the asthma would be relieved and vice versa. The urine of this patient contained acetone and diacetic acid.

Treatment.—A diet similar to that outlined in the previous cases was prescribed. She was also given milk of magnesia, sodium bicarbonate, potassium citrate and tincture of belladonna. The patient entirely recovered within a few days, and from that day to the present writing the diet has been continued and small doses of bicarbonate of soda given every day.

From that day to the present (a period of over four months) this patient has remained perfectly well.

Case 4.—Male, age eight years. This boy has for two years suffered from typical attacks of true migraine. He has recurrent self-limited attacks of severe paroxysmal headaches, usually unilateral, always accompanied by nausea, vomiting and vertigo. He goes to bed with these attacks and remains there one or two days. These symptoms are followed by a long and profound sleep from which the patient awakes free from pain. The urine during these attacks commonly contains acetone.

During the past few months he has had these attacks almost every week, and during the past week he has had three severe headaches. He is slightly constipated, occasionally demanding a laxative. The eyes, naso-pharynx and genital organs have been carefully searched and no reflex factors found. On inquiry, I learned that this boy eats from two to four eggs a day, drinks three glasses of rich milk and eats largely of sweets, including large quantities of sugar, and has oranges or grape fruit for his breakfast. He eats almost no vegetables, stewed fruit, very little meat, except bacon for breakfast, and cannot be induced to take bread without large quantities of butter.

Treatment.—For this patient I prescribed the same diet outlined above. He was to have absolutely no raw fruit, no eggs, no butter, and as little sweets as possible. I also prescribed one-half teaspoonful of bicarbonate of soda three times a day and a teaspoonful of milk of magnesia night and morning. His mother thought it would be absolutely impossible for him to get on with the above diet. I, however, insisted and told her if he could not eat the prescribed foods to let him go without eating. Six weeks later this

boy, who had not had a moment of illness during that time, was greatly improved in his general appearance. He was eating meat, vegetables, cereals, skimmed milk, bread and cooked fruits. I then allowed him one egg a day and three glasses of certified milk, which contains 4 per cent. fat. Two months later this boy is perfectly well, is satisfied with his diet, has had no headaches and has greatly improved in his general health. He has gone to school all of the time. He still continues to take 5 grains of bicarbonate of soda three times a day and an occasional dose of phosphate of soda or milk of magnesia to move his bowels.

THE CLASSIFICATION AND TREATMENT OF CONVULSIONS IN INFANCY*

By Clifford G. Grulee, M.D., of Chicago

THERE are few chapters in medicine that present to us such a varied and unknown field, and at the same time such necessity for immediate action as does the chapter concerning convulsions in the first months of life. Unlike that occurring in the adult, a convulsion in the infant is generally of such a nature that even though the convulsive seizures be local, one can seldom draw conclusions from this as to the location of the lesion in the brain. In fact, perhaps most of the localized convulsions are indicative of general processes, and are not suggestive of any gross or permanent lesion of the portion of the brain to which these convulsions would seem to refer. Having this in mind, it seems to the writer that a classification is especially needful, and one which will take up the etiological factors involved. Any attempt to classify such varied conditions as one finds in medicine usually meets with more or less failure, and one can, therefore, justify classification only inasmuch as classification tends to clarify and not cloud the subject in question. The classification which the writer has used for some time, and which seems to him to cover the field fairly well, is as follows:

1. Terminal convulsions.
2. Symptomatic convulsions.
3. Uremic convulsions.
4. Convulsions due to intracranial pathology.
5. Epileptic convulsions.
6. Spasmophilic convulsions.

One may well question whether Nos. 4 and 5 should not come under one head, but epileptic convulsions are so distinct in character as to justify a separate position in the classification.

Terminal Convulsions.—These convulsions are most often seen in very young infants, dying in a severe state of marasmus, or sometimes at the end of some acute febrile disease. The convulsive seizures are usually not severe. They may affect the extremities or the facial and eye muscles, and are usually generalized in character. As to what the exact nature of the condition underlying these convulsions is, we do not know. Occurring when they do and as they do, from the standpoint of treatment they offer little, and no more need be said of them in this place.

Symptomatic Convulsions.—This type of convulsion is quite frequent. It occurs usually in the acute stage of onset of some acute febrile affection, such as the acute exanthemata, or pneumonia, and so forth. Sometimes these convulsions are single, sometimes multiple, and certain children seem to be especially prone to the condition. At any rate, convulsions occur repeatedly on the slightest provocation, following or initiating the onset of some acute febrile trouble. Very frequently the physician is not able to reach the patient before the convulsion has ceased. It is commonly thought that immersing these children in hot water or applying cold applications to the head, and so forth, are of much value. It seems to me very doubtful whether this is the case. The condition is such a severe one that we feel called upon to do something, and that in a hurry. The convulsion, however, usually goes through to its termination without interruption, no matter what is done. To prevent the recurrence of such convulsions, the use of sedatives is advisable. For this purpose, chloral hydrate given well diluted, a grain to the ounce, rectally, is of much value, and can be used without much danger. Young infants will take as high as two or three grains at a single dose without causing any alarming symptoms. Sometimes it is wise, in order to prevent recurrence of this condition, especially if the febrile period is long drawn out, to keep these children well under the effects of a sedative. In the writer's hands the bromides have been rather ineffective. During the acute stage, to prevent the recurrence at a short interval, where there seems to be imminent danger of such, the use of anesthetics, even in the form of chloroform or a sedative as powerful as morphine, may be advisable.

Uremic Convulsions.—Uremic convulsions are very unusual in young infants. They occur only in very rare instances, aside from the cases where the uremia is due to a scarlatinal nephritis. Acute affections of the kidney are so rare in infancy, aside from that type of infection with *B. coli*, that this form of convulsion is

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rarely a subject for treatment. Hot packs and alcohol sweats are of a great value. The use of an alkaline solution, as advised by Fischer, has met with much success in the few cases in which the writer has tried it. Spinal puncture, too, seems in certain infants to bring relief, and certainly is to be advised in severe cases, with rapidly repeating convulsions. As a rule, the convulsions in uremia repeat at short intervals, and last but twenty-four to forty-eight hours, after which the child frequently makes an uninterrupted recovery. Hence in these cases all our efforts should be towards controlling the convulsion in a short time, and, if possible, not putting any extra work upon the kidneys. Free catharsis is very advisable in these cases.

Convulsions Due to Intracranial Pathology.—There are, perhaps, few intracranial lesions in infancy which do not at one time or another produce convulsions. Even an atrophic condition of the cerebrum may have its occasional convulsion. Of course, the chief intracranial cause of convulsions in infancy is meningitis. All forms are accompanied by convulsions, but the acute types, such as meningococcic meningitis and septic meningitides are especially prone to have violent convulsions. In tubercular meningitis the convulsions are more apt to be less violent and frequently localized. One should not lose sight here of convulsions which frequently occur in meningismus or serous meningitis complicating some acute infection. Most cases of hydrocephalus will show at one time or another some convulsions, but the syphilitic hydrocephalus which is so gradual in development and comparatively mild in degree is not frequently the cause of convulsions.

Among other things may be mentioned brain tumors and intracranial hemorrhage of the newborn.

An interesting case in connection with the latter affection was one to which the writer was called in consultation recently. It was a baby, four days old, with a melena neonatorum which stopped within a few hours after the use of horse serum subcutaneously and gelatin by mouth. It was thought advisable to give the child strychnia to the amount of 1/1000 of a grain, every four hours, hypodermically, and this was ordered. The next day the writer was hurriedly called back to see the case because of convulsions. The child had had several convulsions and the interesting point in differential diagnosis lay as to whether the convulsions were the result of an intracranial hemorrhage caused by the evident tendency to hemorrhage, or by the strychnia. The writer confessedly inclined strongly to the former opinion, but on removal of the strychnia the child made an uneventful recovery, and no more convulsions occurred.

Perhaps one might speak here of convulsions occurring from drugs, but they can hardly be regarded in a special class of convulsions, since their occurrence is happily very rare.

The treatment of convulsions from an intracranial standpoint is evidently the treatment of the underlying condition, and the discussion of such would certainly be out of place in a paper of this nature.

Epileptic Convulsions.—We come now to epileptic convulsions. Contrary to the opinion of most, it is believed by those who have thoroughly investigated the matter that epilepsy originates more frequently in the first year than in any of the succeeding years. According to Birk, of seventy cases originating before puberty, ten originated in the first year of life, and of the remainder, forty-four began in the first eight years of life. One so often regards convulsions in infancy as of a nature peculiarly mild, that the thought of epilepsy occurring at this age is rather remote. The epileptic convulsion in young infants is usually generalized in character. It occurs singly, at times two may occur within a short period of time. The intervals between the convulsions are long at first and show a distinct tendency to decrease, though this may vary quite a little with the individual case. They occur as frequently in breast- as in artificially-fed infants, and show no increase in electrical irritability. They frequently occur in children who later show a distinctly lowered mentality, and it is very difficult to determine whether the epilepsy is the causal factor or some intracranial condition determines the presence of epilepsy.

It has long been said by many writers, and especially English writers, that the ordinary convulsive seizures which we so frequently see in infants are very often followed by epilepsy in later life. It has been the service of Birk to disprove this theory to a large extent. Of fifty-three children whom he was able to follow from infancy on, and who showed a distinctly increased electrical irritability, in no instance was there an epilepsy of any degree whatever. While it is possible that during the ordinary convulsive seizures of a spasmophilia, intracranial hemorrhages, or something of that nature, may occur, such must certainly be an extreme rarity, and there is no reason to believe that such distinctly different conditions as epilepsy

and spasmophilia have the same etiology, or that spasmophilia prepares the way for a succeeding epilepsy. It is altogether likely that epilepsy begins as a distinct clinical entity, and, as such, continues to its termination.

Spasmophilic Convulsions. — We now come to a class of convulsions which perhaps represents a majority of all convulsions occurring in infancy, that is, the spasmophilic type. These convulsions have several distinctive characteristics. First, their tendency to rapid repetition. The writer has seen as many as seventy in twenty-four hours. Second, the frequent occurrence of laryngospasm in these cases. Third, the increased electrical irritability. Fourth, the fact that almost all these cases occur in artificially fed infants who are suffering from some nutritional disorder.

Just a word as to the electrical irritability. These reactions are done with the use of the galvanic current. For the cathodal reactions the anode is placed on the abdomen and the cathode over the median nerve on the inner side of the elbow. The current is then made and broken. The cathode closing contraction is usually of little significance, but in normal conditions the cathode opening contraction of the index finger can be produced only with a current of 5 milliampères or more. Should the contraction be produced with a current of less than 5 milliampères, the electrical irritability is said to be increased.

For the anodal contractions the cathode is placed on the abdomen and the anode in the same position as the cathode in the previous reaction. In other words, the direction of the current is reversed. When the anodal opening contraction is produced by fewer milliampères of current than is the anodal closing, the electrical irritability is said to be increased.

Of these two reactions, the cathodal reaction is the more suggestive.

In no other type of convulsion in infancy is there an increased electrical irritability. One should here make the reservation that it is conceivable that a spasmophilic state may be present at the same time as convulsive seizures from some other cause. But taken by and large the increased electrical irritability is a very strong diagnostic point in regard to the spasmophilic convulsions.

As to the differentiation of these convulsions from the other types above mentioned, the greatest difficulty perhaps lies in the case of the epileptic convulsions, and the differential points in regard to this have already been given. Of all the convulsions mentioned, this type is perhaps most amenable to treatment.

As prophylactic measures perhaps, first, nourishment with breast milk should be mentioned. In a child who has had one attack of convulsions it is very advisable, where possible, to put the child on breast milk. Then, if possible, the electrical reaction should be watched and the child promptly treated when any increased electrical irritability comes. Fresh air and good hygienic surroundings should be emphasized.

As to the treatment of the active condition, we may take this up under several headings. First, hygienic. The writer does not know why, but it has seemed to him in several cases that good, fresh air was especially desirable. Cold air is not advisable, because of the shock which it produces, and hence may be the cause of the onset of a convulsive seizure. Cleanliness, especially the frequent changing of the diapers, is to be carefully watched. Undue handling should be avoided, and all noise should be stopped, where possible. More attendants than are absolutely necessary to take charge of the child should be kept from the room.

In a dietetic way much can be done. During the acute stage it is wise to take away all food and put the child upon barley water. This should not be continued too long. It is a well-established fact that these children will take starchy foods much better than milk. In other words, the starchy foods do not seem to increase the electrical irritability; hence a rather strong starch mixture may be given after the convulsive seizures are fairly well under control without much danger of increasing the tendency. Finkelstein some years ago suggested removing the whey from the food. With this line of treatment the writer has had quite a little experience, and it has always seemed to him that the whey was the element of food which produced the tendency to convulsive seizures. In many cases he has been able simply by removing the whey to decrease the electrical irritability, and by adding it again to produce a renewed increase. By experiments with the various salts contained in the whey, such as potassium, calcium, sodium, and so forth, he has, however, never been able to produce the same reactions as were to be seen with the use of the whey itself. He would, therefore, strongly advise that after the first twenty-four hours curds suspended in a rather thick starch water, preferably arrowroot starch, should be used, and that the whey be only gradually added, perhaps best in the form of buttermilk. In this

connection one might state, too, that cod-liver oil has been shown to produce a gradual but steady decrease in the electrical irritability, and may be strongly advised after the acute stage of the trouble. During the convulsive seizure it is very necessary that sedatives be given. Chloroform is frequently used, and morphine hypodermically. For immediate effect nothing can take the place of these two drugs. However, because of the long-recognized idiosyncrasy of infants to morphine and opiates, in general, it seems wise to use some other sedative where possible. In most instances the bromides are not sufficiently sedative in their action to produce the desired results. Chloral hydrated seems to be very efficient in this respect. It must be given rectally, and should be given well diluted, in the amount of two or three grains for the initial dose, and a grain every four hours subsequently, the interval between doses being gradually increased. Sometimes it is necessary to give small doses of chloral hydrated over a period of two weeks.

Very frequently this condition follows a severe constipation. In this instance it is necessary to clear out the intestines first by the use of a flushing, and then by the use of rather drastic catharsis.

With the line of treatment here given one can in most instances overcome an attack of spasmophilic convulsions. One should always remember, however, that certain of these babies die in the first few convulsions, and that it is impossible to save them. These convulsions are those of the so-called apneic type, where the diaphragm is evidently in a prolonged state of spasm. In this type immediate treatment is imperative. Perhaps the best results may be obtained by dipping the child from a tub of hot to a tub of cold water repeatedly. The writer has seen this carried on for as long as an hour, with excellent results. The child, apparently dead at the start, finally revived and for many months thereafter was perfectly well.

Berend claims excellent results from the use, subcutaneously, of 15 to 30 Cc. of an 8 per cent. solution of magnesium sulphate in all forms of spasmophilia.

In conclusion, the writer wants to lay emphasis upon the necessity of differentiating the various types of convulsion, in order to arrive at definite results with treatment. It is especially necessary to differentiate the epileptic from the spasmophilic type. This, in many instances, is comparatively easy.

The use of electrical irritability which, as I know, has not as yet been taken up by the general profession, is to be advised, because it means so much in the future treatment of these conditions.

It is probably impossible to bring a child many miles to an office in order to be able to test the electrical irritability, but after the convulsive seizures have ceased, the determination of their cause will be of distinct advantage to the patient.

122 So. Michigan Ave.

THE TREATMENT OF SCARLET FEVER*

By Henry C. Becker, M.D., of New York

The treatment of scarlet fever will be modified by the severity of the attack, the age of the patient, and the complications. For the sake of convenience the treatment may be considered as it applies to the different forms, mild, moderate, and severe, scarlatina anginosa, the hemorrhagic and malignant types, the treatment of the complications, prophylaxis, and dietetics.

Mild cases.—In these no internal medication is required. However, regardless of how mild the infection or evanescent the rash, the patient should be put to bed and kept there absolutely for four weeks. This class as much as any other has a nephritis for a complication. The room temperature should be kept at about 70° F. and the patient should wear flannels to guard against the possibility of draughts; errors in diet and chilling of the skin from exposure are the most frequent causes of the nephritis; because of the very mildness of the disease in these cases the parents, nurse, or guardians must be warned and impressed with the importance of these orders.

These patients, when children, are frequently very hungry, and for that reason it is best to control their diet for two or three weeks at least, even if albuminuria is not detected. The physician should be very explicit with those who have to do with the nursing in these mild cases (and in the average household it is the mother), for while she will understand and be most willing not to give meats, still she may be anxious to give the beef juice from a roast of beef or concentrated beef broths, thinking them to be "light" and "nourishing." Milk should be the basis of the diet; junket, milk toast, custard, sago with cream, vanilla ice cream, bread and milk, farina, oatmeal, cornstarch, rice boiled or as a pudding, crackers and bread, baked potatoes, baked apple and cream, apple sauce, stewed prunes, orange and grape juice. The resumption of animal fare should be very gradual in all cases and fish,

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oysters, chicken, and eggs should be given before beef, lamb, and mutton.

In mild cases as in all other types of scarlet fever, oil of eucalyptus should be employed externally for rubbing because of its powerful antiseptic and disinfecting properties. As a disinfectant, oil of eucalyptus is stated to be three times stronger than carbolic acid (White and Wilcox); the "old" oil is more effective even than the "new." Externally it is less irritating to the skin than most essential oils, which is important when we consider a new and sensitive epidermis. As it evaporates from the body the vapor is inhaled and exerts a disinfecting action on the air passages and lessens the tendency to ear and throat complications. The oil may be used pure before the desquamation has set in, the patient being rubbed once or twice daily with the same, but after desquamation it should be mixed with equal parts of liquid petrolatum or a cold cream made with liquid petrolatum as a base, which is the cold cream of the average pharmacy today. The reason for this dilution is that oil of eucalyptus as an essential oil evaporates, leaving no residue; to prevent "dusting" of the desquamated epithelium, a fixed oil is added, and as oil of eucalyptus in large doses internally is said to be an irritant to the kidney cells, it is just as well to employ a fixed oil that is nonabsorbable by the skin. The mixed oil rubbed in the patient's skin every morning after desquamation has set in acts as a protective against accidental chilling from possible exposure. There is no objection to bathing the patient with soap and tepid water every morning prior to rubbing with the oil.

In the itchiness that some patients complain of, the oil gives great relief; for the same purpose the writer has employed with satisfactory results some of the different lubricating jellies on the market made from Irish moss, glycerin, and containing some formaldehyde solution.

Severe and Moderately Severe Forms.—To reduce restlessness, delirium, or excessively high temperature, the patient may be sponged with alcohol and water, equal parts, and this failing a cold pack may be employed. When a bath is used the patient should be immersed in a tub of water having a temperature of 90° F., and afterward cold water or ice may be added until the temperature is reduced to 80° F. In all, the bath should last from three to five minutes. The patient's pulse should be noted during the bath, and the temperature should be taken just before and ten minutes after, to note whatever effects it might have had. Such baths may be repeated at three or four hour intervals. In hyperpyrexia an ice cap to the head may be employed. Some recommend irrigating the bowels with a pint of cool water containing ten grains of sodium sulphocarbolate. The coaltar derivatives and antipyretics should not be employed because of their depressive action. High posteruptive fever is often the result of faulty ingestion and digestion. A dose of castor oil or solution citrate of magnesia may work wonders with a high fever from such cause. In all forms of scarlet fever it is advisable to keep the bowels active.

In young children the onset of the disease is often ushered in with convulsions; here a few whiffs of chloroform and an enema may be sufficient for their control. Should they persist, five grains of chloral hydrated, for a child one year old, dissolved in a teaspoonful of warm water, injected into the rectum, may control the convulsions; if a larger amount of water, i. e., one ounce, is used, it may dribble away. Should the convulsions recur, for a child one year of age, give a hypodermic injection of morphine sulphate, 1/16 grain. An ice bag may be applied to the head. If the pulse is weak or when the first sound of the heart is not strong, or the two sounds lose their normal tone, stimulation must be started; strychnine sulphate, 1/100 grain, every three or four hours for a child of three to six years of age; children when in a toxemic state tolerate large doses of strychnine. If the pulse is poor and of low tension, and no myocarditis exists, or if there is valvular disease and lack of compensation, tincture of digitalis in doses of two to five minims every four hours can be used. If there is sudden heart weakness and immediate response is demanded, camphor dissolved in sweet almond oil, one, two, or three grains, or solution of adrenaline chloride in doses of two to five minims should be given hypodermically.

The throat and urine are to be examined daily. The patient with an inflamed throat should gargle every hour with Dobell's solution and warm water, equal parts. Hydrogen peroxide diluted with water, one part peroxide and six or eight of water, may be employed. In young children unable to gargle a spray should be used.

In the severe anginous cases the throat symptoms outweigh all others; the membrane may be spread to the faucial pillars, uvula, and also into the nares, greatly resembling a diphtheritic membrane; a culture should at once be taken to determine the presence or absence of Klebs-Loeffler bacilli. Once a day the throat

should be painted with a 50 per cent. resorcin solution in alcohol (Seibert), and, besides, gargling and spraying should be done. When the membrane is extensive, spreading into the nares, hot saline irrigations should be employed; a fountain syringe with a nasal tip attachment is employed for this purpose and the bag should be held almost two feet above the level of the patient's head, who if a child is wrapped in a sheet and laid on its side while the nostrils are irrigated; should there be sloughing and fetor, a few crystals of potassium permanganate should be added to the hot normal saline solution, until it is a light pink in color; the potassium permanganate will act as a deodorizer. The irrigations may be repeated at three hour intervals. The patients often get great relief from holding pieces of cracked ice in the mouth; and if immediately afterward the patient's nose and throat are irrigated with hot saline solution, the treatment seems more effective and gives greater relief than when either is used alone (Winters). Steam inhalations from a croup kettle are also useful.

Malignant Cases.—In this class of cases there is an overwhelming of the patient's system by a profound toxemia, a veritable shock is sustained. Here a hypodermic of morphine, 1/16 grain, for a child one year of age, 1/8 to 1/16 grain for a child of eight or ten years, is of service in counteracting the shock to the constitution. For the pronounced vomiting, cocaine hydrochloride, ¼ grain, in a capsule with bismuth subcarbonate, 5 or 10 grains, for a child four to six years old may be of service. High colonic irrigations with warm saline solution should be used; when the pulse is weak and the heart demands stimulation the treatment as already outlined is indicated. Oxygen gas if the patient is dyspneic and stuporous should be constantly used.

In the hemorrhagic type, which is more severe, the blood is so disorganized that vomiting of blood takes place along with hemorrhages into the skin and submucous membranes; while the treatment as already outlined is indicated, these cases are invariably fatal. If the patient is cold and pale, hot baths are needed and dry heat when out of them.

COMPLICATIONS

In scarlet fever, complications have a tendency to involve the kidneys and the serous membranes.

Nephritis.—The urine in all cases should be examined at frequent intervals for albuminuria, although a puffiness of the eyelids may precede its presence. When this condition exists the patient should be given small doses of calomel at frequent intervals, followed by a saline purge; after this the bowels should be kept active to aid in eliminating toxins. To stimulate diuresis, high colonic irrigations of normal saline solution at 110° to 115° F. should be employed at three or four hour intervals. To stimulate diaphoresis a hot dry air bath may be given the patient; hot water bags are placed in the bed about the patient, who is warmly covered by woolen blankets, between which is a rubber sheet. This usually sufficies to start the patient sweating, but if it should be delayed a hot pack or hot bath may be given; the hot bath is not to be repeated, as it makes the skin too sensitive. As for medicines, if the patient has a high temperature with a bounding pulse, tincture of aconite should be administered in conjunction with the alkaline diuretics. Two minims of the tincture may be given every one or two hours till the temperature and pulse respond; this for a child of five to twelve years of age, younger children get half the dose, or in proportion. Liquor ammonii acetatis in half teaspoonful doses, potassium citrate, acetate, and bitartrate in 5 and 10 grain doses are suitable for children of ages as given.

As for food, the patient should be on an exclusive milk diet or some modification of milk; if fever is high, the milk should be peptonized. The patient should be encouraged to drink plentifully of water to promote elimination and kidney stimulation.

Otitis Media.—When earache is complained of by older children, or when a baby maintains a high temperature without other known cause and cries, is stuporous with symptoms akin to a meningeal irritation, always examine the eardrums. If red and bulging, incise immediately; afterward hot irrigations with a one to 10,000 bichloride solution are necessary. In babies a local or general anesthetic is not usually employed when incising the eardrums, but in older children it may be advisable. First instill into the ear a small amount of solution of adrenaline chloride, one to 5,000, and let remain for five minutes; then dry the ear and introduce against the eardrum a pledget of cotton wet with a few drops of Bonain's liquid. Let remain *in situ* for a few minutes and then incise. The Bonain's liquid is prepared by titrating in a mortar equal parts of crystallized carbolic acid and menthol and finally adding a similar amount of pure cocaine (not the salt of the alkaloid).

Cervical Lymphadenitis is common in cases where throat symptoms are pro-

nounced; beside the treatment of the throat condition, cracked ice may be applied externally unless signs of suppuration are present, when the glands should be incised and drained. Unguentum Credé applied to the swollen glands before suppuration is well worth trying. Sometimes a 20 per cent. ointment of ichthyol in wool fat gives relief from pain and prevents suppuration.

Scarlatinal Rheumatism is really a septic infection of the joints or muscles. Externally a mixture of equal parts of ichthyol, oil of wintergreen, and wool fat may be applied and spread on the affected site, covered in turn with cotton batting and oiled silk. Sometimes codeine with small doses of phenacetin may have to be given for the pains.

Vulvovaginitis requires frequent cleansing with warm boric acid solution, employing a soft rubber catheter; after drying vulva, dust with compound stearate of zinc.

Other complications of less frequent occurrence are endocarditis, myocarditis, pericarditis, pleurisy, and peritonitis, and a consideration of their treatment need not be gone into here.

PROPHYLAXIS

When a case of scarlet fever is discovered in a family of children the patient should at once be isolated and the well children removed to another home, and for fear that they have been exposed to the infection, they should be kept out of school for a week and under observation, with frequent examination of their throats and temperature.

The patient should be placed in an isolated room at the end of the apartment, so that others need not go through or past the room, or if in a house the patient should preferably be put on an upper floor. All hangings, rugs, carpets, and superfluous furniture should be removed from the room. Only such books and toys should be allowed as may be destroyed afterward. The nurse should wear a washable dress as well as a hood to protect her hair; the physician should wear a gown or duster in going into the patient's room, and which he may leave hanging on a nail outside the door when he leaves. Often a sheet soaked in 2 per cent. carbolic solution has a salutary effect in reminding folks of the quarantine. To remove linens, bedclothes, and the patient's nightclothes from the room, a wash boiler or tub half full of water and preferably containing some chloride of lime should first be brought in and the materials immersed in it; this will prevent "dusting about" of desquamated epithelium in removing clothes from the room. The clothes should then be thoroughly boiled and afterward rinsed.

When the quarantine is over the patient should have an antiseptic bath and a shampoo; a very weak bichloride solution will answer; this also applies to the nurse in charge. Fresh, clean clothing may then be put on. There then remains the fumigation of the room and its contents. The windows and doors must be tightly closed and sealed and a formaldehyde gas generator outside the room forces the vapor through the key hole. The room should be kept closed for several hours and then well aired. If other children are to occupy the room it may be advisable to have it "done over," the wallpaper removed, the woodwork washed, and the ceiling calcimined.

The duration of the quarantine in this disease should be at least six weeks or until all skin has desquamated; eight weeks would be better yet. To aid in removal of the dead skin from hands and feet, pumice stone may be employed along with repeated soakings in warm, soapy water.

Convalescents are frequently hungry, and their diet should have supervision for two months after the onset of the disease; besides this for the secondary anemia that may be present a mild chalybeate tonic may be useful.

Mist. Ferri et Ammonii Acetatis.....℥i
Glycerini.....℥iv
Aquæ,.....q. s. ad. ℥iv
M. Sig.—A teaspoonful every four hours in water.

229 West 105th Street.

THE CAUSES AND TREATMENT OF ECZEMA IN INFANCY AND CHILDHOOD*

By Rowland G. Freeman, M.D., of New York City

Eczema, being a disease of the skin, might seem to be a disease which in a city like this, abounding in specialists, should always be treated by a dermatologist. This disease, however, occurring in infancy needs, I believe, a pediatrician more than a dermatologist, for while the applications to the skin are important, in most cases the regulation of the diet and the daily régime are far more important than the local applications.

It is not my intention in the following paper to attempt to cover the whole subject of eczema in infancy, but to consider certain types which one frequently meets with in practice. We meet with acute eczema and chronic eczema; eczema of internal origin

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and eczema of external origin, but under good surroundings at least eczema of external origin without internal derangement is rare.

Eczema is one of the common diseases which the pediatrician is called upon to treat, and is often considered one of the most resistant to treatment. There is also a popular idea, in which some members of the medical profession sympathize, that the cure of eczema may be followed by sudden death, and this may well be the case if an attempt is made to cure eczema of internal origin by external applications only. In a recent number of the "British Journal of Children's Diseases" a number of cases of eczema, the cure of which was followed by death, have been reported. This report, however, deals only with the local treatment of this condition, no mention being made of internal treatment.

The eczema of infancy follows many types and may be acute or chronic. Acute eczema not infrequently develops during the first weeks of life in children fed at breasts which produce much more milk than is required for the nourishment of the child. They give often a fairly typical history. These babies may be gaining from ten ounces to a pound a week and are having from five to six movements a day which, while yellow, contain mucus and curds. Suddenly the skin of the face and body becomes red and soon assumes the typical dry, scaly appearance of eczema. On weighing the baby before and after nursing it is found that the child is getting much more food than it is entitled to, while an examination of the breast milk shows a normal or rich quality. These babies are readily cured by reducing the time of nursing so as to limit the baby to the proper number of ounces for its age.

Illustrative cases of this condition are as follows:

A baby four weeks old, weighing eight pounds at birth and at one week, now weighing eleven pounds or a gain of one pound a week for the three weeks, broke out in a general eczema involving the face, scalp and body. It was having about six movements a day which were yellow and curdy with mucus, and was getting from 3 to 7 ounces of milk at a nursing. The milk on analysis contained about a normal amount of fat, sugar and proteid. The nursings were cut down to 3 ounces every three hours, and Lassar's paste was applied to the skin. In six days the rash was a little better; in eleven days the movements were reduced to two a day and the baby was again practically well. The urine in this case showed no abnormality.

Another child fed by a wet-nurse was two weeks old; it had gained one pound during the second week, at the end of which time it was found one morning to have an eczematous rash all over its body. It was having six movements a day, yellow with curds and mucus, and had gained 9 ounces in two days. The feedings were cut down to 3½ ounces. The wet-nurse was dismissed and the mother's breasts used with accessory feedings. Lassar's paste was used on the body and a rapid recovery ensued.

Most eczema in infancy and childhood, if actively treated when it first appears, can be controlled as readily as these two cases.

Many cases of eczema in older children, particularly those of long standing, are more difficult to treat, especially if on inquiry it is found that the child has been on a normal amount of a well-balanced ration. In such cases considerable information may be obtained by a careful analysis of the urine directed particularly to the detection of marked acidity, to the presence of acetone and diacetic acid or evidence of intestinal intoxication as shown by the presence in the urine of indican and phenol.

If the tongue is coated efforts to improve the digestion so as to give it a normal appearance should be undertaken, while if the movements show irregularities or any elements of the food are present in the stools in abnormally large amount an excellent clue is furnished for dietary modification.

Local sources of external irritation must of course be removed, especially pediculi capitus, plugs of wax or inflammation of the ears, adenoid obstruction, or the irritation from an adherent foreskin shutting in decomposing smegma.

While the removal of these external sources or irritation may hasten the cure, the internal derangement, usually of the gastro-intestinal canal, is of far more importance. Evidences of such disorders may be apparent in a heavily coated tongue, an offensive putrid, sour or acetone odor to the breath, or in a distended abdomen and a history of hiccough or belching of gas, or in the passing of considerable gas from the intestine. The stools also furnish frequently an important clue, an analysis showing some part of the food undigested while constipation or diarrhea should be corrected. The putrid stool indicating proteid decomposition, the sour stool indicating carbohydrate disorder or the ammoniacal urine indicating too much fat in the food, should be noted and efforts directed to their correction instituted. In addition the study of the urine, as indicated above, will aid in the determination of the character of the disorder, and its correction.

The types of eczema vary. Usually there is a seborrheic eczema of the scalp, often an eczema of the cheeks, or in the fold behind the ears. The neck may be involved or the parts under the diaper irritated by the acidity or alkalinity of the urine or stools. In other cases isolated areas persist for years—patches on the back of the hands or wrist, or on the legs or buttocks.

The treatment of these cases must begin with the removal of the external sources of irritation and a complete study of the internal disorder to ascertain in what respect the diet is in error or in what way the overworked digestive organs may be relieved. The urine may furnish information by its concentration that too little water is taken. Its excessive acidity or an acidosis as shown by the presence of acetone or diacetic acid may call for the use of saline laxatives and alkalies, or an intestinal intoxication as shown by the presence of indican and phenol may indicate a putrefactive process in the intestine which may often be relieved by the administration of lactobacillary culture. Excess of fat or carbohydrate in the stools should direct attention to the reduction of these elements in the food.

In many cases the trouble is, as in the cases mentioned above, too much food. In others a badly balanced ration; in others some irritating food such as eggs, oatmeal or stewed fruit, or cake, candy, or preserved fruits or jam or marmalade. In these cases we have one of the most important uses for caloric feeding. An estimate of the amount of food required to properly support life should be made and this should, if possible, be given in a well-balanced mixed, digestible diet. There are exceptional cases where a poorer but more easily digested food may be given, the calories being made up largely of sugars as in malt soup. If such foods are resorted to they should be used only temporarily until the condition is under control.

The external treatment we must learn from the dermatologist, and most of my resources for external treatment I have gotten from Dr. George W. Crary. One fact I have learned from experience and that is that in order to get the most prompt result the application must be kept in constant contact with the diseased skin. For facial eczema a mask should be worn, while on the limbs the application should be covered by lint and bound in place. Lassar's paste made from one part zinc oxide, one part starch and two parts vaseline is altogether the most useful application for the skin, especially of the face. It may be rendered somewhat antiseptic by the addition of 2 per cent. of rescorcin or euresol. For the dry, chronic eczematous patches on the body or limbs of babies I find one part tar ointment to seven parts Lassar paste most useful. For the scalp in some cases a diluted sulphur ointment is useful.

I will narrate a few cases in which these methods were used. A child seven months old, fed on normal milk modifications, at times on mixed milk dilutions, at other times top milk modifications, had suffered from eczema since it was one month old. It weighed fourteen pounds, was well-developed and normal. Its face was red and oozing in places, it had thick, dry patches on its knees and shins, and involvement of the parts under the diaper. In order to nourish the child, at the same time relieving its digestive process, malt soup was ordered, rhubarb and soda given, and Lassar's paste applied, the parts being bathed with 2 per cent. resorcin solution night and morning. In eight days the skin was much better and the child had gained a pound. In twelve days the skin was well. Although rough places occasionally appeared they readily disappeared on treatment and no tendency to eczema has recently shown itself.

A boy four years old had developed eczema during his first year and had been troubled with it ever since. He had a coated tongue, was nervous, constipated, and had recently had a cold and bronchitis. For three weeks he had been on the following diet:

Breakfast: Apple sauce, egg, milk and malt soup.

Dinner: Soup, meat, vegetables, prunes.

Supper: Egg, apple sauce, milk and malt, soup and cereal.

He had patches of eczema on the hands and face. His diet was limited in amount, the apples and prunes and malt soup were eliminated as well as the egg at supper. Lassar paste and resorcin lotion were applied while rhubarb and soda was administered. In eight days he was much improved and within two months entirely well. There has been no return of the trouble.

Another child two years and four months old had had a bad attack of eczema at seven months, and since that time had not been free from some patches. She was then nervous, a poor sleeper, had night terrors and was constipated. Her diet was modified by taking away raw peaches, cream and Nabisco biscuit, and local applications ordered. In one month the eczema was healed and there has been no return of it.

Another child nineteen months old had

suffered from a severe general eczema, involving the whole body, face, scalp and limbs. She had been treated by specialists in Berlin and Paris and New York, and the mother was finally told by a New York dermatologist that she should consult a pediatrician. The child was fed five times between 7 a. m. and 5 p. m., and her diet included milk, stewed prunes, bread, butter and cereal. She stook a quart of milk a day beside other carbohydrates and fat. She would not take eggs. The urine was alkaline, specific gravity 1,010, otherwise negative. The feces showed excess of carbohydrates. She weighed twenty-eight pounds and was thirty-five and one-half inches long. Her diet was laid out on a basis of a required thirty calories to a pound. Four meals were given a day furnishing in all 875 calories.

	Calories.	Calories
7.30 a.m.—		
Milk, 8 ounces	170	
Water, 2 ounces		
Cereal, tablespoonful	25	
Rusk, ½ ounce	65	
	——	260
10.30 a.m.—		
Milk, 8 ounces	170	
Water, 2 ounces		
	——	170
2.00 p.m.—		
Clear soup, 3 ounces		
Well-baked or boiled potatoes, tablespoonful	100	
Slice of bread, 4 inches square, ⅜ inch thick	75	
Tablespoonful of squash, or puree of lima beans, or boiled rice or well-cooked macaroni	35	
	——	210
5.30 p.m.—		
Milk, 8 ounces	170	
Water, 2 ounces		
Rusk, ½ ounce	65	
	——	235
Total calories		875

To this meat was added later. The bowels were kept open and ointment was applied continuously. In two months a marked improvement had taken place. The face was clear and most of the body and arms had healthy skin. Some patches, however, remained which were all healed in five months and there has been no recurrence.

In conclusion the eczema of infancy and early childhood, which is occasionally due to external irritation, is usually due to gastro-enteric derangement and must be attacked primarily by correcting that derangement. The food should be cut down to the caloric requirements, the ration should be balanced and digestion aided. Stewed fruits and cream should be prohibited. The parts affected should be kept well covered with non-irritating applications.

THE TREATMENT OF PELLAGRA*

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It is a bold essayist who ventures any extended views on a subject which is in the hands of the gods. Pellagra is a much discussed and a much unsettled problem. Nearly five generations of medical thought have struggled with its many phases, and we rest to-day without any fixed opinions either as to its etiology or its treatment.

Accepted views of nearly two hundred years have been shaken and almost overturned, and the investigations at this writing are undertaken quite *de novo*.

The field work points to a certain epidemic spread of the disease and the likelihood of an insect carrier of the morbid cause is more and more forced upon the conviction of those who have studied the reports of various groups of scientists accumulating facts in various parts of the world.

If the dietary has any relation to the disease, the most modern findings would argue that the foodstuffs are only incidental and not radical in the causation.

Laboratory experiments strongly point to a microorganism as the real element on which the responsibility is to be placed, and the stable-fly is so far the criminal most ready for indictment, as the carrier of the infection.[1]

The observations of pellagrologers nearly a hundred years ago suggest the animal source of contagion, for Strambio[2] called attention to the prevalence of the disease among those who spent much time in stables, and he emphasized the epidemicity among those who lived in stables.

Sporadic pellagra is unusual; the disease nearly always occurs in groups and its habit of spread along water courses has been variously noted. It is, moreover, a household disease, prevailing in greater number among the women and children who are much at home.

The clinical evidences of pellagra have been thoroughly described; the manifestations running into a variety which is almost Protean in its diversification. Certain skeletal principles, however, stand out as classical, and these should be established in all suspected cases of pellagra. The irregular disturbances of the intestinal tract, anorexia, diarrhea, nausea, with consequent stomatitis are usual.

The catarrhal involvement of the genito-urinary apparatus, the turgescence of the

* Read before the State Med. Assn of Texas, Texas State Jour. Med., July, 1914.

[1] Report Thompson-McFadden Commission, 1914.

[2] Rayer's Atlas (Paris, 1827); English Translation, 1835.

respiratory tract, with the inflammatory evidences associated are further symptoms of note.

Loss of weight, often rapidly, is a sign of more than casual importance and should be emphasized.

The dermatological evidences are apt to be progressive. First showing as simple hyperemia, especially on the hands, neck and face; this inflammation increases in waves, with each succeeding disturbance growing more and more exudative, until the eruption breaks in a catarrhal mass of lesions, papulo-vesicular, and often excoriating the whole of the surfaces involved. With the defervescence of the local eruption, the scaling, roughness, infiltration and pigmentation of classic pellagra will usually supervene. The pigmentation will survive for months after the more acute eruption has faded, and in some cases the discoloration becomes fixed.

The attack upon the mucous surfaces is progressive until all of these are involved leading then to a saturation of the individual with systemic toxins, or endotoxins, which involve all the membranous areas of the body, including the skin and internal organs, followed by the attack on the meningeal and spinal serous membranes. So follow, usually, the nervous symptoms of the disease, at first apt to be purely psychologic, but afterwards, as the disease grows older, becoming organic and even destructive. Insomnia, vague apprehensions, hallucinations, loss of memory, neglect of affairs, and hypochondria are among the transitory occurrences.

The disturbances of reflexes are described as prominent symptoms by most writers on pellagra, but the observation of the author leads to the opinion that these are not early in their appearance, and while dependable for diagnosis *when found*, they should not be too much stressed *as essential* in *all* cases of pellagra.

This brief survey is presented to preface the opinion that pellagra should have an alternative title, viz., *Erythema toxicum epidemicum recurrens.*

Its course is like other forms of erythema of exudative character; it shows all the evidence of a progressive intoxication with an unknown substance, but one which by analogy resembles the malarial organism in its waves of effect and which resembles some of the exanthemata in the eruptions with their distribution and crises of occurrence, especially dengue. It lowers the rate of coagulability of the blood nearly seventy-five per cent. and it occasions a loss of tonicity in the walls of the vessels themselves, often causing hemorrhage from the mucous membranes of the naso-pharynx, buccal cavity, bowels and genito-urinary tract.

The early nervous symptoms are suggestive of central hyperemia or congestive disturbances, more or less ephemeral in character, until more organic changes have developed.

The cases which go on to fatal issue are essentially nutritional in type, losing weight, growing progressively anemic in marked degree, emaciated and finally marasmic, neither resisting the disease nor assimilating the food necessary to establish the resistance.

The treatment of pellagra has been undertaken from many points of view and by many earnest in the study of the problem.

The earlier therapy was purely symptomatic in its outline and by diet restriction and suggestion added to medication *pro re nata.*

The present discussion aims at reviewing only the more modern suggestions in treatment with brief presentation of the several medications and methods employed, with the reasoning for usage whenever such may have appeared.

The treatment of pellagra has been undertaken by various reporters from the symptomatic side, and from the theoretic side, assuming that the disease is (a) neuropathic, (b) toxemic, or (c) bacterial. The range of remedies covers a variety which embraces tonic, supportive, autogenic, surgical and theoretically specific medication. So far as authoritative information has been obtainable these have been cataloged and are here submitted in alphabetic groups, with such discussion as may have seemed to be indicated:

Arsenic.—Almost all who have written of pellagra employ arsenic in its treatment, either as a specific or for the tonic effect. Most forms of arsenic have been used by one or another writer, and the newer preparations preponderate in the choice of selection.

Atoxyl was first suggested and used for pellagra by v. Babes, of Roumania (*Spitalul Bucuresci*, 1901, XXI, quoted by Wood, *op. cit.*) Wood submits it as the drug of preference. Atoxyl is one of the arylarsonates (paramidophenylarsenate of sodium), containing 24.1 per cent. of arsenic (Bertheim).

The dosage employed is from ⅓ of a grain to as much as 7½ grains; the large doses cause considerable reaction and often a complex of untoward effects, differing with various observers.

The results obtained by intermittent (three- to four-day intervals) hypodermatic injection of atoxyl justify the conclusion that it is a valuable remedy in pellagra. It is supposed to have especial action on the blood, skin and nervous system and has been employed to a considerable extent in protozoal diseases (e. g. trypanosomiasis). Babcock (J. W.) considers atoxyl the most hopeful single remedy and emphasizes its

prompt effect in checking the diarrhea (1 or 2 grains, four to seven days apart). Searcy (George H.) used atoxyl in half-grain doses, once a week, later increasing to 2 grains once a week. Siler (J. F.) and Nicholas (H. J.) state that at the Peoria, Illinois, State Hospital atoxyl proved of little value. Smith (M. M.) gives atoxyl preference over other arsenic preparations. Wilkinson (J. G.) lists atoxyl first. Winthrop (G. J.) and Cole (H. P.) declare atoxyl the most satisfactory of arsenic preparations. Lavinder (C. H.) says atoxyl should be used with caution.

Arsacetin (sodium acetyl arsanilate) is supported by some observers in 1- to 7-grain doses, given by needle, following the method of use of atoxyl. (Discussed by C. H. Lavinder, T. G. Wilkinson, *et al.*)

Soamin (sodium-para-aminophenylarsonate) a close similar of atoxyl, and employed in dosage up to 10 grains, by needle. It is believed to be less toxic than atoxyl. Martin (E. H.) has used this remedy more than anyone, and he expresses the opinion that it is the best of the arylarsonates. It usually causes no reaction unless given in more than 5 grains at a dose. The dose should be determined by patient's weight (0.1 grain for every twenty pounds of weight). Soamin should be given at intervals of three to five days, and over long periods. (Also discussed by J. G. Wilkinson, M. M. Smith, L. Leroy and C. H. Lavinder.)

Arsenites (of potassium, in Fowler's solution; of sodium in the liquor sodii arsenitis; of iron). Niles (G. M.) employs iron arsenite together with sodium cacodylate, alternating these drugs every other day for two or three weeks, every two days for two or three weeks, then once a week for each drug throughout the treatment. Ampules of iron arsenite solution in sixteen minim doses are employed, the cacodylate in ⅓-grain doses. Niles also uses at the same time Fowler's solution and saturated solution of potassium iodide (three parts of the first to five parts of the latter) increasing to physiologic effects of the arsenic, when the Fowler's solution is reduced to one or two to eight parts of the iodide.

Babcock (J. W.) believes Fowler's solution the best single remedy. Dunlap (F.) gives Fowler's solution in 3-drop doses every four hours. Muckols (O. P.) gives Fowler's solution with chlorid of iron. Dyer (I.) uses the liquor sodii arsenitis as a general tonic, after acute symptoms have gone. (Also discussed by C. H. Lavinder, F. M. Sandiwth, *et al.*)

Salvarsan. Among the arsenical preparations, salvarsan has taken a large place with men who have established an easy technic for its use. The results are altogether satisfactory from the point of view of those who have employed the remedy. Some observers (Lavinder, notably) warn against its use and insist that it should be employed only by those qualified to give it properly. In my judgment, the administration of salvarsan for any purpose requires hospitalization, and therefore necessitates the removal of the patient from his or her immediate surroundings, which would therefore discount its use among general practitioners. Its justification seems to have been based upon the belief that pellagra is essentially a neuropathic disease at all stages and that it resembles the paretic and tabetic stages of syphilis.

Cole (H. P.) and Winthrop (G. J.) in reporting twenty-one collected cases show 47.6 of no improvement; 33.3 per cent. of improvement with relapse, and 20 per cent. of improvement followed by relapse, and death in one instance. Crook (J. J.) advocates the use of salvarsan. Inmon (E. H.) discusses salvarsan as one of the remedies which offers service. Kelly (D. W.) reports one case of recovery after five doses had been given at ten- or fifteen-day intervals. He began with three grains and gradually increased the dose to a final dose of nine grains. Kimbrough (J. A.) considers salvarsan of no benefit in his cases. King (P. M.) and Crowell (A. J.) report nineteen cases with one death. The administration consisted of three doses of 0.6 Gm. of salvarsan at ten day intervals.

Perhaps no one has used more salvarsan in the treatment of pellagra than E. H. Martin. His former experience with soamin led him to believe in the arsenical preparations. In spite of his extensive use of the remedy, he believes that salvarsan is dangerous if the patient is extremely weak. He considers the intravenous administration best and regulates his dose according to the body weight, allowing 0.1 Gm. for each twenty pounds. If the reaction after the present dose is well borne, further doses are given. The technic should be perfect. Injections usually administered at seven-day intervals. Martin reports a total of twenty-seven cases, of which twenty show apparent cures, three are doubtful but improved, and four ended fatally after treatment had begun.

Nice (C. M.) reports three cases with improvement almost immediately and with rapid recovery. Smith (M. M.) discusses salvarsan among the forms of arsenic employed. Wilkinson (J. G.) does not recommend salvarsan, preferring the use of atoxyl and its congeners.

Sodium Cacodylate. Sodium cacodylate (given in ¼- to 3-grain doses by needle) has been extensively employed, and of the arsenical preparations is the least likely to produce general disturbances. Its action is slower and perhaps less certain in effects than other preparations named. It has the advantage of being usable at frequent intervals (every day) and for a long time.

Bowling (E. H.) gives 3 to 5 grains every other day to saturation. Elrod (J. O.) gives 3 grains every three days, reporting four cases treated, one with remarkable effect. Kimbrough (J. A.) uses the drug the same way, and reports two cures. Leroy (L.) believes soamin preferable to sodium cacodylate.

Other preparations employed recently are as follows:

Hexamethylenamine (formin, aminoform, urotropin, cystogen, cystamine, etc.) The use of this drug suggests another interpretation of the symptom complex. It is specifically useful as a vesicular antiseptic, probably stimulant to all membranes, and its service may be justified by its antiseptic, or antimicrobic action.

Bagby (B. B.) reports remarkable results from 15 grains given three times a day. Frazer (Thompson) gave this drug from April 14th to September 1st, and reports recovery in one case. Inmon (E. H.) supports the use of formin as adjunct to transfusion or salvarsan; Kimbrough (J. A.) also warmly praises this remedy; Lavinder (C. H.) discusses it, and Leroy (L.) commends it when there are present cystitis and dysuria. Wilkinson (J. G.) combines hexamethylenamine with calcium sulphide and stomachic tonics.

Sodium Chloride. — Lombroso (quoted by Wood) suggested salt as valuable in pellagra, and other observers have noted its usefulness in gastralgic types. It is a curious suggestion when the scorbutic signs in pellagra are so prominent. The scarcity of salt among the peasants in Italy perhaps occasioned the earlier suggestion for its

use as a possible aid in establishing a balance of the economy of the one afflicted.

Potassium Permanganate has been given by R. T. Dorsey (quoted by Niles) in 2-grain doses, with the argument that its efficacy is due to some oxidation process involved.

Thyroid Extract.—W. S. Thayer (quoted by Wood) gave thyroid extract in one case with good result.

Gelsemium.—Blosser (Roy) reports nineteen cases of pellagra treated with gelsemium, given as the fluidextract (made from the green root). Beginning with three drops three times a day, after a few weeks the dose may be decreased to two drops and later to one drop, continuing until all symptoms have disappeared. The results as summarized at the time of the report (July, 1913), were as follows: Five cured; seven about well; five improved; two dead; one of them hopeless from the start, the other dying of pneumonia.

Castor Oil.—Bowling (E. H.) gives a half ounce of castor oil every night for six months or a year. Bosser also recommends the continuous employment of castor oil. With the castor oil Bowling gives freshly prepared chlorine water in teaspoonful doses every two hours, and keeps this up for months.

Calcium Sulphide has been used by Bowling, and is suggested by Kimbrough and Wilkinson.

Nitric Acid.—Deeks (W. E.) advises 15 to 30 drops of dilute nitric acid in three-fourths of a tumbler of water, three times a day on an empty stomach. With this treatment, sweet and starchy foods are prohibited, and nourishment is limited to fruit juice, broth and milk; with the relief of nausea and acute symptoms, a carbohydrate-free diet is ordered.

Opium.—Gray (J. W.) reports good effects from the tincture (dose 5 to 30 drops three times a day). The symptoms subside in one to three weeks, but smaller dosage is continued for a month after. Reports fifty-nine cases treated with opium; five deaths.

Among other treatments suggested of non-medicinal character may be mentioned:

Psychotherapy.—Emphasized by Niles, who says that almost as much benefit may be derived from keeping the patient in a cheerful and optimistic frame of mind as from medicinal treatment.

Change of Climate.—Most authors agree on this, but C. C. Bass has gone further in suggesting an air-cooled room or chamber as a therapeutic medium for ameliorating these cases.

Hydrotherapy has been essayed, and if systematic promises material benefit as an adjuvant.

Transfusion.—Cole (H. P.) first suggested transfusion and reports a number of favorable results (64 per cent. of recoveries) among thirty-four cases so treated. The material was variously derived from pellagrins who had recovered, as well as from relatives and from normal subjects.

Inmon and Lavinder discuss the treatment by transfusion, the latter sounding a warning against inexperienced practice with such a method of treatment. Cole and Winthrop note the fact that cases treated by transfusion method were mostly those in late stages and many resistant to other remedies.

The general care of the pellagrous subject requires that the chief features of the disease should be watched and met by appropriate remedy, even though reliance may be placed upon the specifics suggested.

Corn products have been generally prohibited as a concession to earlier opinions of the Zeistic school.

The patient is to be protected from sunshine and sunlight.

Varied and nutritious diet.

Anorexia and nausea may be relieved by nux vomica, condurango, and other bitters (Bowling). Astringent mouth washes are suggested. Bismuth subnitrate and salol for diarrhea, and hyoscine, trional, sulfonal, etc., for restlessness and insomnia (Kimbrough).

Ergot and guaiacol carbonate for diarrhea are suggested by Lavinder, who believes the patient is better under institutional treatment.

Leroy suggests autogenous vaccine, if the case justifies; for gastro-intestinal symptoms, dilute hydrochloric acid with nux vomica and pepsin is advised. For the sore mouth he suggests variously, hydrogen peroxide, milk of magnesia, liquor alkalinus antisepticus (N. F. and potassium chlorate; for diarrhea, albumin tannate, and enemas of cold water or with boric acid. Insomnia he treats with warm baths, massage, trional, etc. For insomnia resulting from exhaustion, he recommends hot milk, and a hypodermic of strychnine and small dose of atropine at bedtime.

Niles suggests bismuth, betanaphthol and resorcin, given in milk of bismuth, for the diarrhea; he advises solution of thymol (1 grn. to 1 oz. of water) for sore mouth, also 25 per cent. solution of boroglyceride.

Nuckols gives general eliminative treatment together with arsenic and iron and suggests a prescription as follows:

Potassii Citratis	
Sodii Benzoatis	āā ℥ij
Vini Pepsini	℥ij

to be taken in teaspoonful doses before meals.

Sandwith gives fresh bone marrow for the nutrition. Blaud's pills, tincture chloride of iron, quinine with iron and other general tonics are variously advised.

A careful review of recent literature brings out several points, so far as treatment is concerned.

First of all, arsenic is preponderatingly the drug of preference, and salvarsan, atoxyl and soamin are those most used.

The general principles of the care of the patient are alike, and no prophet has risen to point the way to a specific.

Still there is a demand for some comprehensive and comprehensible method of treatment which the average practitioner may follow with the hope of results. More

than this, the practitioner wants a treatment which the patient can follow at home, for no matter how far the results may go in relieving pellagra by the use of salvarsan, it requires technical skill to administer it, and it requires discrimination in selecting the cases to whom it should be given.

It is my intention to conclude this paper with a purely personal opinion of the treatment of pellagra, based upon an experience of nearly seven years and governed by results in nearly one hundred cases treated.

Let me preface what I have to say by stating that I have not yet lost a case of pellagra which I have treated entirely and throughout by myself. I have sat in consultation with other physicians at the bedside of cases already beyond relief, and I know of four cases which have died, but not in my hands.

The treatment followed will be outlined as fully as possible.

Every case of pellagra treated has taken the hydrobromate of quinine, which I consider as nearly specific as any drug mentioned by any one who has until now written about the disease. The quinine is the only drug administered for its specific action in combating the cause of the disease.

In mild cases as little as 2 grains and as much as 5 grains are given, three times a day; in severe cases, with diarrheal symptoms, with nervous manifestations, with stomatitis, cystitis and with catarrhal and even hemorrhagic evidences from the mucous membranes, as much as 10 grains are given every two or three hours, and some patients have taken 10 grains of the hydrobromate of quinine every three hours, night and day, for four or five days.

One is apt to be governed by his own experiences, and for this reason I have seen no occasion for abandoning a remedy I know to be of service, in order to undertake other medication, as honestly and as earnestly administered by others. For this reason I have had no comparative experience with other drugs, as I have not used them, for specific action in pellagra. Quinine hydrobromate has always produced results for me.

The cases of pellagra must be individualized for effective results. Of a dozen patients each may present different features or phases of the disease. The patient must be treated always, rather than the disease.

One patient may have little evidence of the disease; may be cheerful and little disturbed either by the condition or by the diagnosis, for to many patients the name of pellagra is a decided shock. The next patient may have pronounced psychologic symptoms, entirely out of proportion to the evidences of the disease. Yet another patient may present the whole symptom complex and with each phase accentuated. Some pellagra patients have symptoms against the rule. For example, fully 10 per cent. of those seen by me have had no diarrhea; some of them have been constipated, while others have had alternate periods of costive and loose bowels. *They should not all be treated alike.*

When diarrheal symptoms prevail, salol, or sodium salicylate, or magnesium salicylate may be given at the same time as the quinine. Even small doses of powdered opium will be indicated during the first few days; *but the quinine alone in large doses will control the diarrhea* in due course, usually within the first five days.

Potassium chlorate in 3-grain doses, given with iron lactate in the same quantity, will produce favorable effect upon the stomatitis if given every three or four hours. The formula used carries also a small quantity of cascara and nux vomica to offset the constipating effect of the iron.

The administration is in prescriptions like these:

Ferri Lactatis.....grn. ij vel iij
Potassii Chloratis.....grn. ij vel iij
Ext. Cascaræ.....grn. ¼
Ext. Nucis Vomicæ.....grn. ¼
[Excipient.] q. s.
M. et ft. pil.
Sig: One every three or four hours.

Or, when the pill is not easily swallowed,

Ferri Lactatis.....
Potassii Chloratis..... āā grn. iij
Fl. Ext. Aromat. Cascaræ.....gtt. xx
Tinct. Nucis Vomicæ.....gtt. xv
Elixir Simplicis.....
Vel. Lactat. Pepsin.....qs. ʒj
M. et Sig: Teaspoonful every three or four hours, well diluted.

Strychnine is often indicated from the start, and where hemorrhage from the mucous membranes is present and distressing calcium chloride in 10-grain doses is of service.

Pellagra shows a distinctly lessened coagulability, noted already in this paper, and the calcium salt helps here. The further administration of gelatin (two ounces in the twenty-four hours) seems to serve both as controlling the coagulability and in some degree as aiding nutrition. I give gelatin as a necessary adjunct in all cases, and the patient takes it in drinks, broths, milk and in jellies or other dessert.

The fruit juices, citrus fruits especially, are of service in scorbutic types, and as they have been of so much service, they are ordered as a necessary part of the dietary.

Perhaps the citrates of potassium and of sodium would serve a like purpose, but with these I have had no experience.

During the first few weeks of treatment, the patient is fed on quinine hydrobromate, in no case with less than 5 grains three times a day. The complications are treated as they may arise, and as indicated above.

With insomnia, psychasthenia, the writer has found that chloretone in 3- to 5-grain dosage, with twice that quantity of sodium bicarbonate acts better as a sedative than other hypnotics; moreover, the effect of chloretone is transitory.

No restriction is put upon the patient's diet other than to warn against foods naturally indigestible, as hot breads, fried foods, and excess of condiments. Alcohol is usually prohibited, excepting in claret drinkers, to whom a modicum is permitted with meals.

The general care of the pellagrin is important. This may be summarized:

(1) Insist on cheerful surroundings; have the patient adopt the motto, "Look up" and adhere to it. Establish a morale from the beginning by an optimistic view of the prognosis. Warn the patient of a long-time treatment, of relapses, and of the need of proper care and *treatment between* the attacks.

(2) Keep out of the sunlight. Spend the day between sun-up and sun-down on the shady side of the house, with the light obscured. Also keep out of the kitchen and away from overheating occupation.

(3) Keep the patients *out of bed*, so long as this is possible. Do not let them go to bed, except to rest, or when the symptoms of the disease compel.

My patients are enjoined to go out early in the morning before the sun is up and in the evening after the sun is down. The moderate exercise, contact with well persons, and the general moral uplift is an asset in the treatment; it prevents or discounts despondency.

(4) When the acute symptoms are controlled, reduce the quinine hydrobromate to 2 grains three times a day and given general tonics, as the glycerophosphates, lactophosphates, iron and manganese compounds.

Now arsenic is permissible and serviceable. I usually give the sodium arsenite with other tonics, as:

Liquor Sodii Arsenitis	gtt. iii
Tinct. Nucis Vomicæ	gtt. x to xv
Tinct. Gentiani Comp	gtt. xv
Tinct. Cinchonæ Comp	gtt. xv
Syr. Pruni Virgin	qs. ʒj

M. et Sig: In water after meals.

Blaud's compound pills are also useful.

(5) The improvement in appetite, strength and desire to take gentle exercise are signs of improvement. No better criterion, however, can be found than the gradual gain in weight. As the loss in weight is a constant factor in the syndromes of pellagra, so the obverse is more than casual in its importance with relation to a return to normal.

(6) The most important period of treatment in most cases of pellagra is during the usual seasons of attack, or in the months of cold weather. Every effort should be made to bring the patient up to normal of resistance. The physician should see the patient often enough to maintain a psychological relation which will permit control.

The dietetic care, the medicinal treatment (tonics, regulation of functions, etc.), should be systematic. The weight should be recorded regularly so as to see what normal may be maintained. As the warm season approaches any loss of balance can be noted and met. Often a change of climate for these patients, treated already during the first attack, will obviate a recurrence.

In conclusion, we might submit that pellagra is a toxemia, in its development taxing all the vital forces of the victim of its infectivity, overcoming the resistance of the patient in greater or less degree as the extent of the attack is measured. Until the cause is known and a specific treatment follows, we must use our intelligence in building on the patient's own powers of resistance, by training him in habit, diet, and in physical well-being, to a point where he can defeat the forces of the organized disease.

This must be accomplished, not with any one remedy, but by all measures indicated in the individual case; complemented with any means or remedy which in the particular case may seem to be specific. The author for this last purpose commends the hydrobromate of quinine, in the method of dosage prescribed, as having served an excellent purpose with excellent results in his hands.

TREATMENT OF UTERINE HEMORRHAGE

In a very severe case af uterine bleeding after curettage in the second month of pregnancy, S. S. Cholmogoroff employed all the usual methods without success. He finally sewed up the external os tightly and in this way effectually controlled the hemorrhage. He highly recommends this method in all cases of severe uterine bleeding during the early months of pregnancy.—Ztbl. f. Gyn.

Progress in Materia Medica and Therapeutics

TREATMENT OF GAS BACILLUS INFECTION

Six cases of gas bacillus (*B. aerogenes capsulatus*) infection are reported by L. B. Robertson, of Boston. He refers to a previous article by Cramp in the "Annals of Surgery" and to the fact that localized infection of this type can be overcome by the resistance of the body tissues as shown by Blake and Lahey. These six cases were treated by local applications of the undiluted U. S. P. 3 per cent. solution of hydrogen peroxide by irrigation and soaked dressings and swabbing. Four of the cases recovered and two died; one from a deep infection of the thigh muscles complicated by hemorrhage, and the other from pulmonary disease after the infection had been controlled.—Jour. A. M. A., Nov. 1, 1913.

VENESECTION AND GELATIN IN TREATMENT OF INFLAMMATION AND PROCESSES WITH EFFUSION

Luithlen has previously called attention to the modification in the test reaction of the skin after serum or colloidal substances have been injected. Recent research on serodiagnosis and serotherapy has confirmed his findings and also his assumption that the result has nothing to do with any property of the serum as an antigen but rather to the fact that the serum represents a colloidal substance, and that it is to this colloidal property that it owes its efficiency in pregnancy dermatitis, etc. He has worked out a method of research to determine the permeability of the vessel walls under various conditions. About 100 Cc. of Ringer's fluid is injected into the abdominal cavity; half an hour later he injects into a vein in the ear 2 Cc. of a 10 per cent. solution of sodium ferrocyanide and after intervals of one, two, three, four, six, eight and ten minutes, he withdraws a small amount of fluid from the abdominal cavity and examines it for the presence of the chemical. This series of tests is followed at once with a repetition of the procedure using 5 Cc. of a 2 per cent. solution of sodium iodide. The tests were made on rabbits, some of which had been previously treated with gelatin, some with colloidal silicic acid and some with serum, others with preceding venesection. The results show that there was marked delay in the passage of the intravenously injected chemical after the above preliminary procedures. On the other hand, the passage of the chemical into the abdominal cavity was notably accelerated when instead of the above, the animals had been treated beforehand with electrolytic substances or hydrochloric acid.

In short, the research reported demonstrates that parenteral administration of colloidal substances, albuminous or not, and repeated venesection materially reduce the permeability of the vessels in rabbits for chemicals introduced into the veins. These findings throw light on the benefit from Gilbert's autoserotherapy in pleurisy and peritonitis with effusion, and also on the benefit from repeated venesection in certain cases. They suggest that venesection deserves a prominent place in the treatment of various processes of an inflammatory nature with effusion, pneumonia, pleurisy, etc., as a reduction of the permeability of the vessels materially aids in recovery.—Med. Klinik, 1913, No. 42.

TREATMENT OF HYPOSPHYXIC PSYCHONEUROSES

G. Maupetit writes of the treatment of cases of psychoneurosis associated with what Martinet has termed the hyposphyxic syndrome—low systolic and pulse pressures, with venous stasis and hypertension, excessive viscosity and toxicity of the blood, and resulting poor nutrition of peripheral organs, the whole forming a vicious circle. This tends eventually to react on the patient's mental state, a neurasthenic psychosis resulting. To break into the vicious circle, Maupetit recommends, as initial measures, subcutaneous injections of oxygen, glandular therapy, and administration of heart tonics. Later, when the general condition has improved, he places great faith in systematic morning exercises, supplemented by hydrotherapy. To raise the tone of the nervous system, he injects two Cc. of normal saline solution daily under the abdominal skin. Diet he also considers important. The patient is allowed considerable latitude as to the articles taken, but the quantity of food is limited. Sauces, fatty soups, and eggs are prohibited, and the evening meal is dispensed with or nearly so. Sodium sulphate, one teaspoonful in a half glassful of water, is taken each morning for a time. The patient's sleeping period is not allowed to exceed eight hours. Gratifying results were obtained with these measures.—Presse Médical, May 22, 1914, per N. Y. Med. Jour.

LUMINAL IN EPILEPSY AND PSYCHOPATHIC CONDITIONS

For more than eight months H. Hoven treated all epileptics (thirty-five men, women and children) in the institution at Lierneux with luminal. The majority were serious cases with frequent attacks and psychic disturbances. In order to obtain a clear picture of the effect of luminal in epilepsy, the preparation was also given to patients, in whom bromides had produced good results. The remedy was furthermore tested in about fifty cases of mania, dementia praecox, senile dementia, idiocy, melancholia and general paresis.

Hoven's conclusions regarding luminal based on these observations, are as follows: Luminal is an excellent hypnotic, which is capable of rendering valuable service in psychiatric practice. In epilepsy it exerts a distinct sedative influence, often superior to that of the bromides. It is, however, to be remembered that luminal is a powerful remedy and, therefore, must be used with care. Especially in bad cases of kidney and cardiac disease is caution necessary. Hoven, however, observed no serious after effects. In epilepsy he gave 0.075 Gm. (grn. 1¼) twice a day. If this proved insufficient the evening dose was increased by 0.075 Gm. (grn. 1¼). More than a total of 0.3 Gm. (grn. 5) in one day was rarely administered. As a hypnotic or sedative he gave 0.3 to 0.6 Gm. (grn. 5 to 10) at night in one or two doses. In mania and dementia praecox 0.3 to 0.45 Gm. (grn. 5 to 7½) were employed several times a day, but 0.75 to 1.0 Gm. (grn. 12 to 15) in twenty-four hours was not exceeded. The author also frequently used luminal-sodium subcutaneously; its action seemed to be more intense than that of luminal per os.—Bull. de la Soc. de Méd. Mentale de Belgique, 1913, No. 17.

TREATMENT OF TETANUS

K. A. Meyer, of Chicago, writes that one of the most important rules in medicine is the prevention of disease, and nowhere does this hold true so much as in the prophylaxis of tetanus. In every case of crushing injury, compound fracture, and even in many minor injuries when contaminated with street dirt and dust (especially important are injuries around stables and farm yards), the prophylactic injections of antitetanic serum should be employed. In the less severe cases 1,500 units of the serum are injected subcutaneously; but when in doubt use three to four thousand units. If the case is not seen for a number of days after the injury, use the serum intravenously (3,000 units), and at the same time give 1,500 units under the skin. This is an important point, for the disease may develop after the subcutaneous injection, owing to the slow absorption of the serum and the virulence of the disease. This is overcome by the intravenous injection.

The local treatment of wounds would require too long a discussion, but remembering the fact that the bacillus of tetanus is an anaerobic organism, much can be accomplished by keeping all wounds exposed to the air and allowing no closed pockets of infection to form. If the injury is small, as in punctured wounds, gunshots, etc., make an incision to the lowest depth of the wound and cauterize. If irrigation is necessary owing to suppuration, use hydrogen peroxide and follow with permanganate or iodine solution.

The treatment of a case of tetanus has undergone some changes in the past few years, and the lowest mortality is shown in the cases treated with the serum. The one important rule is the early use of the serum and in quantities sufficient to neutralize all the toxin in the system. When the first symptom of tetanus is noted, an immediate intravenous and intraspinal injection of antitetanic serum is given. In the average case 6,000 units are injected intravenously and 3,000 units intraspinally. At the same time it is of advantage to give 3,000 units under the skin, which by its slower absorption will neutralize any toxin that is found after the neutralization of that already in the system. In three to five days 5,000 units are again given intravenously, and later the injections are given according to the individual case and the symptomatology present.

Some advise the injection of the serum near the seat of injury, but the end results show no improvement. If the disease follows an injury, local treatment should be instituted. The wound should be thoroughly exposed and irrigated with hydrogen peroxide and permanganate. The intraspinal injection of magnesium sulphate solution is still advocated, and some enthusiastic reports have been made.

The general treatment will be as follows:

1. *Hygiene.*—The patient is placed absolutely at rest in a large, airy room, with a nurse in constant attendance. The room should be the quietest in the hospital or home and darkened throughout the day. Nothing should be allowed to disturb the patient.

2. *Diet.*—The diet should be liquid and given at stated intervals. Milk and cream form the basis of the schedule. Plenty of water should be given. If this causes too

much disturbance, give nutrient enemas and tap water per rectum. Special attention should be given the mouth after each feeding, for sordes and stomatitis will result from the trismus.

3. *Baths.*—Tepid baths are given daily, and continuous baths if possible are very restful.

4. *Medication.*—The patient's bowels should be emptied by an initial saline and, if necessary, a vegetable cathartic should be used later on in the course, always remembering that much harm can be done, for convulsions may be brought on by the patient striving to use the bed-pan. In case of convulsions, use from fifteen to thirty grains of bromides per rectum and, if necessary, chloral can be added. These medicines are given with four ounces of normal salt solution every four hours until the convulsions are controlled. Chloretone in fifteen to twenty-five grain doses can also be used. In very severe cases morphine hypodermically may have to be used to control the seizures. If cardiac failure is imminent, use caffeine or camphor hypodermically. During convalescence iron preparations should be used.

In conclusion, allow me to emphasize the prophylactic measures necessary to combat the disease and remember, the earlier the diagnosis and the sooner the serum is used, the better the prognosis.—N. Y. Med. Jour., Aug. 1, 1914.

TREATMENT OF SCARLET FEVER

H. B. Gudgel, of Hazleton, Ind., writes that in beginning treatment the bowels and kidneys should first receive attention, and be kept free throughout the disease, e. g., by calomel 1/5 grain, ipecac 1/10 grain, repeated every hour for five or ten doses (age considered), followed by one or two ounces of the citrate of magnesia every three hours. Elimination through the bowels and kidneys is certainly conducive of good results.

The irrigation of the colon with two to four pints of normal salt solution from one to three times in twenty-four hours is not only cleansing, but of great benefit in reducing the fever and nervousness. The fever is best controlled by sponging in cold water or the cold pack. If the fever and nervous symptoms are extreme, pour cold water from a pitcher over the body and continue until the fever and delirium are reduced.

Internally the following may be used:

Tincturæ Aconiti ..... ♏15
Spiritus Mindereri ..... ℥i
Aquæ Menthæ Piperitæ ..... q. s. ℥ii
M. Sig.: One-half teaspoonful every half hour until sweating is produced (age considered).

The nervousness may be met by two to three grain doses of sodium bromide every one to three hours. The throat should be frequently sprayed or swabbed with mild antiseptic solutions, 5 per cent. boric acid, 20 per cent. hydrogen peroxide, or normal salt solution. The cleansing of the throat and irrigation of the nasopharynx is very helpful and grateful to the patient. In adult patients the swabbing of the throat with a 2 to 4 per cent. solution of one of the albuminates of silver is worthy of more frequent use. Externally, the application of hot bran poultice or glycerinated muds is very helpful in all cases.

Internally, the child patient may be benefited by tincture of iron chloride, two to four drops every four hours. Antistreptococcic serum is of service in a number of cases. The heart should be guarded throughout by 1/300 to 1/100 grain strychnine nitrate every four to six hours. If heart weakness appears, tincture of strophanthus, nitroglycerin, whisky, or the hypodermic injection of camphor in proportionate doses is very satisfactory. The kidneys should be given watchful attention with an occasional diuretic and antiseptic as a safeguard. In an ear showing symptoms of otitis with pus, a slight puncture of the eardrum will often prevent distressing complications. The irritation of the eruption may be often relieved by carbolated or mentholated petrolatum or olive oil. This also prevents the spread of the disease and should be used until desquamation has taken place.

The diet should be liquid; milk, oatmeal, or barley water with the use of lithiated water for thirst is best during the fever stage. After the acute symptoms have subsided, gruels, milk toast, buttermilk, lemonade, and orangeade may be admitted. However, too much caution cannot be exercised in the selection of food. During convalescence, iron or malt with strychnine is useful. Finally, the physician may overcome a multitude of sins by carefully making known that the condition is threatened with many serious complications, especially of the heart, kidney, and ear. He may be able by such explanation in advance to clear himself of blame. Use caution in every case and insist that the patient remain under observation for two or three weeks after complete desquamation has taken place.—N. Y. Med. Jour., July 4, 1914.

DO NOT TEMPORIZE in urinary extravasation. This condition is cellulitis and sepsis is an ever impending complication. Lay open widely.—Urologic Review.

CALCIUM THERAPY

Goeppert, of Bonn, does not attach much importance to the administration of calcium in rickets or in diarrheal conditions of children, nor does he go into detail about these. In melaena neonatorum and Henoch's purpura with intestinal hemorrhages, he injects three to five Cc. of a mixture of Merck's sterile gelatin with 5 per cent. of calcium chloride. In severe hemorrhagic conditions he has also used horse serum by injection together with calcium acetate or chloride in 5 or 10 per cent. solution every two hours per os. After three or four grams have been taken the interval between doses is increased to three or four hours. He is uncertain whether the serum or calcium is more important for the favorable results.

The author's experiences with Januschke's method of treating coryza (10 to 14 Gm. of calcium lactate pro die) showed no marked success, nor does he consider calcium of much value in pleurisy or empyema. In hay fever, however, it is of distinct advantage and 4 to 5 Gm. of calcium citrate daily for some time previous to the onset of the fever is recommended. During an attack, larger doses, such as are designated later on for tetany, are the most effective.

Goeppert does not believe that a prompt action on inflammatory skin conditions can be expected from calcium, although it often has a beneficial influence on certain forms of urticaria. In urticaria of pregnancy 10 to 20 Gm. of gelatin with calcium chloride are injected intramuscularly with success. As pain is likely to follow the injection and possibly some fever, it is perhaps preferable in other cases to give 10 to 12 Gm. per os of calcium chloride or calcium lactate. Regarding infantile eczema, the author states that further trials with small doses, about 4 Gm. a day of calcium chloride (cryst.) or lactate are in order, but marked effects are hardly to be looked for. As the course of severe eczemas in children is very variable, one should beware of attributing temporary improvement to the remedy, that happens to be in use at the time. Schkarin has found a mixture of lime water and linseed oil beneficial as an application for inflammatory facial eczema. A zinc paste (Aqu. calcis 20.0, zinc oxide 10.0, adeps lanae ad 50.0) is used to advantage by the author in eczemas that are not very moist.

That the majority of cases of bronchial asthma do extremely well when they take, daily, four grams of calcium chloride or lactate for a long time, seems an established fact. During an attack or when one is imminent, larger doses (15 to 30 grn. every two hours) are indicated.

In tetany, occurring in adults, and in certain cases of epilepsy, which seem akin to tetany, calcium is frequently of very great benefit and large doses are apparently not necessary. According to Curschman, 15 grn. of calcium lactate three to four times a day seems to do the work.

The latent tetany of children, so-called spasmophilia, must be treated differently. In many of these cases, it is necessary to relieve serious conditions in as short a time as possible. Calcium can accomplish this with certainty in six to twelve hours, but heroic doses are necessary. Goeppert recommends calcium chloride (cryst.) 22 to 30 grn. at first every two hours, then every three hours. Calcium lactate is used in the same amounts, but is somewhat uncertain. To maintain the improvement which results, 22 grn. calcium lactate or chloride (cryst.), are continued every six hours. On the fourth day the same dose is given five times a day and is then gradually reduced so that after the eighth day not more than a dram and a half are taken in twenty-four hours. Again a reduction is made until a dram a day is reached, an amount which can be continued indefinitely and for which calcium bromide, 30 grn. a day, can be substituted if desirable, but not necessarily to advantage. A recurrence of a slight spasm of the glottis or of the facial phenomenon may occur as the dose is decreased; if so, it is advisable to resume the first dose every two hours for three doses, and then begin again the four hourly administration, as used on the second day.

The most important point in connection with calcium, used in this way, is that the form of feeding which the general condition of the child demands, can be continued, without danger of producing spasms. Unfortunately, calcium has an unpleasant taste. Some infants take it readily in syrupus simplex or raspberry syrup; in others it is better to put it into milk or soup. Calcium lactate seems to taste less disagreeably than calcium chloride as far as some individuals are concerned, and is also to be preferred in the few cases, in which vomiting or abdominal distension occurs. Goeppert suggests, furthermore, that every case, which is seen during a spasm of the glottis, should receive, first of all, an enema of chloral hydrated so that its quieting influence can be exerted until the calcium has a chance to act.

In cases of spasmophilia, in which spasms rarely occur, the large doses of calcium, suggested above, are not absolutely neces-

sary, the Finkelstein clinic having shown that 30 grn. of calcium bromide are sufficient in such patients. In the really serious cases, however, the procedure with large doses as described, marks so distinct an advance, that no one who has ever seen the effect it produces when properly carried out, would ever consider using any other form of treatment in this condition.—Med. Klinik, 1914, No. 24.

TREATMENT OF CHRONIC ULCER OF THE LEG

A. W. Williams states that in the few cases of leg ulcers in which iodides and mercury given internally fail, usually present a history of attacks of rheumatism, and are relieved by salicylates. He usually administers the sodium salt, with sodium bicarbonate, and gives directions to the patient as to cleanliness of the teeth and mouth. In a few cases of callous ulcer with extreme brawny condition extending far beyond the lesion itself, he has found large doses of citric acid, given for four days, followed by the application of Bier's suction cups, of benefit. In occasional cases of edematous ulcer with much discharge, calcium iodide proved useful. Small doses of magnesium sulphate several times daily are of marked value where constipation and a freely discharging ulcer coexist. Iron, quinine, and digitalis are also often required in cases of leg ulcer.

As for local treatment, when eczema rubrum complicates the ulcers, but the latter are not markedly inflamed, Williams wraps the entire part in lint soaked in a one in 3,000 solution of mercury bichloride. A few days later, this is replaced by a mixture of three parts of thick calamine lotion (without lime water) with one part of one in 1,000 mercury bichloride solution. The lint is changed twice daily, being carefully soaked off if adherent. Among other valuable topical preparations are a weak boric acid lotion and the two following, recommended by Schaffer:

I.

Resorcinolis ..... grn. v-xxv
Aquæ ..... ℥i
Solve.

II.

Thymolis ..... grn. iii
Linimenti Calcis ..... ℥i
Solve.

Later, when scales and redness have subsided, the author uses the following paste:

Pastæ Zinci, Lassar (N. F.) .....
Unguenti Acidi Borici .....
Petrolati ..... āā ℥ss
Misce.

If any pustules exist, 5 to 8 grains of ammonium chloride should be incorporated in the foregoing or a similar paste. Still later, he fills up the ulcer with weak iodoform, starch, and zinc powder, covers with gauze and applies zinc gelatin (glycerogelatinum zinci molle, N. F.) and bandages.

In treating a sloughing leg ulcer, the author first applies one of the less soluble local analgesics, dissolved in alcohol, douches the lesion well with a deodorizing suspension of terebene in water, rubs down the surface of the ulcer with rags soaked in kerosene—cleansing also the skin around it—and fills the ulcer with the following iodide of starch paste:

Amyli ..... ℥iiss
Glycerini ..... ℥v
Aquæ ..... ℥ii
Boil, and when nearly cold add the following solution:
Iodi ..... grn. iv
Potassii Iodidi ..... grn. vi
Aquæ ..... ♏lxxx

This is to be applied very thickly on and around the ulcer, and covered with linen and a bandage. The dressing is to be renewed twice daily. Under this treatment the pain is lessened or renewed in a few days, the hard borders of the ulcer soften, the surface is cleansed, and granulations form with but little discharge. In a few cases the iodine starch paste is not suitable: Patients with an idiosyncrasy to iodine, occasional cases of intensely inflamed ulcers, cases of irritable ulcers about the malleolus in neurotic women, and cases in which the discharge from the ulcers is very profuse.

Tuberculous ulcers and those of Bazin's disease yield to the application of a one in eight potassium permanganate solution, followed by dressing with the starch iodide paste.—Brit. Med. Jour., per N. Y. Med. Jour., July 4, 1914.

TREATMENT OF ECZEMA MARGINATUM

Montgomery reports a case of eczema marginatum or eczema due to the same fungus that produces the eczema marginatum of the crotch, occurring on the toes as has been pointed out by Sabouraud. He describes the usual behavior of *Epidermophyton inguinale* of the skin. It begins in an integumentary fold and spreads, dying except at the margin and generally favoring situations where it finds warmth and moisture. For the cure of the disease, the fungus must be destroyed and the main dependence is on chrysarobin ointment. In the case reported the chrysarobin ointment had to be made stronger than is sometimes the case, using 1.5 parts to 15 parts each of lanolin and petrolatum, or about 5 per cent. strength.—Jour. A. M. A., April 4, 1914.

CHINEONAL THERAPY

Boeters reports data regarding twenty-five cases in which chineonal was used. The conditions, presented by these patients, varied from cancer and arthritis deformans to tabes dorsalis and neurasthenia. A rise of temperature was present in very few of his cases and in only one could distinct antipyretic action of chineonal be noted. On the other hand the symptoms, accompanying tonsillitis, bronchitis, pertussis and herpes febrilis were markedly benefited. In neuralgia, tabes, functional disturbances and restlessness with impaired sleep, the remedy acted well, but not equally so in all cases. It failed to bring relief to patients, suffering from acute articular rheumatism or having advanced carcinomata with metastases. On an average 0.3 Gm. (5 grn.) was given two to three times a day. One case received 0.3 Gm. (5 grn.) six times on one day. This patient, a rather sensitive woman, complained of nausea, while taking that amount of chineonal, but at no other time were by-effects observed.—Med. Klink, No. 23, 1914.

ADRENALIN AND PITUITRIN IN COMBINATION

As is generally known, adrenalin intravenously produces a rise in blood pressure, which is rather short in duration and is followed by a fall in tension, that is at times alarming. When given subcutaneously, on account of marked local vasoconstriction, only a small quantity of adrenalin reaches the circulation and 94 per cent. of the remedy is destroyed at the site of injection. Kepinow and others having shown experimentally, that if hypophysin is given together with adrenalin the disadvantages of the latter's action are no longer in evidence. Rohmer, of Marburg, tried the combined administration of adrenalin and pituitary extract clinically in children. He used it chiefly in circulatory disturbances, occurring in pneumonia, diphtheria and typhoid fever. Young children received 0.25 Cc. of a 1:1000 pituitrin solution and 0.5 Cc. of 1:1000 adrenalin solution simultaneously into the subcutaneous tissue. In older children double this dose was injected without detriment. These injections were made every six hours and in between, a syringeful of camphor oil or caffeine was administered. With this treatment Rohmer achieved unexpectedly good results in some almost hopeless cases of pneumonia and in a case of diphtheria with cardiac weakness, in which it was necessary to continue the procedure for twelve days before the desired improvement was acquired. In the last instance there could be no doubt but that the combination of adrenalin and hypophysin was the potent therapeutic factor, as when omitted, alarming symptoms reappeared in spite of other medication, and were dispelled when the injections were resumed. In another pneumonia, in a girl eighteen months old, camphor was entirely ineffective and adrenalin-pituitrin only was used. Following a collapse, an injection raised the blood pressure from 60 Mm. mercury to 80 Mm. in two minutes and to 96 in four minutes. Fifteen minutes later it was 85 Mm. and remained at that point for five hours. Further careful observation showed that the effect of the adrenalin-pituitrin combination lasted six to seven hours. In accordance with his experiences, Rohmer considers it justifiable to advocate the employment of extract of the hypophysis in combination with adrenalin in the treatment of circulatory disturbances in acute infectious diseases.—Münch. med. Woch., No. 24, 1914.

MAGNESIUM SULPHATE IN TETANUS

F. Mielke, Göttingen, reports in detail a case of tetanus in a girl not quite six years of age, in which magnesium sulphate was employed. The child recovered. At first, 7½ and 15 grn. of magnesium sulphate had no effect, but when 45 grn. (15 Cc. of a 20 per cent. solution) were injected subcutaneously every six hours, not only were the number of paroxysms considerably reduced, but even relaxation of the muscles was attained. The injections were not always carried out at six-hour intervals; when spasms were less frequent three in twenty-four hours occasionally sufficed. After a day, the site of injection was not tender, no infiltration was present and no change in the subcutaneous tissue was noted. Various expedients were tried to prevent the attack, subsequent to the insertion of the needle, and it was finally found that 15 grn. of chloral one hour before injection and ⅙ to ⅓ grn. pantopon a quarter of an hour beforehand were efficient in this respect. During the days, previous to the use of magnesium sulphate, eleven severe paroxysms and sixty-four of mild degree occurred in twenty-four hours. When pantopon and chloral were administered without magnesium sulphate, eleven severe attacks and forty-six mild ones were recorded in the course of a day, while with the magnesium sulphate injections (45 grn. three to four times) only one or two marked spasms and twenty insignificant ones took place. The dose mentioned refers to magnesium sulphate in crystalline form.—Therap. Monatshefte, No. 4, 1914.

TREATMENT OF PLACENTA PRAEVIA

The treatment of placenta praevia is the subject of an article by E. P. Navis, of Philadelphia, who says that it is an accident that causes hemorrhage and infection, and demands hospital facilities and experienced operators. Logically, he says, it is a variety of ectopic gestation, and as regards infection it is usually more dangerous than the condition ordinarily so called. Any vaginal hemorrhage in a pregnant woman is a warning of danger, too frequently neglected because it is often painless, and the dangers of infection must be kept in view. Manipulation and vaginal examination and the use of the tampon should be avoided as far as possible. One classification of these cases is those where the os is not entirely covered by placenta and those where it is. In the hands of the general practitioner and in private houses the best treatment in the first class of cases is to rupture the membranes as extensively as possible when dilatation permits, and to give the patient tonic doses of strychnine and allow her to deliver herself, or at least to try to, before artificial delivery is attempted. In complete placenta praevia in the hands of a general practitioner in a private house, the Praton-Hicks method of bringing down the leg and breach of the child would give the mother the best chance. Anesthesia may be required. The placenta must be perforated by one or two fingers, combined version performed and the leg seized and drawn through the placenta. Under no circumstances should forcible or complete extraction be attempted, but a noose or bandage may be slipped around the child's ankle and a moderate weight attached if constant tension is desirable. The mother may then be stimulated as required, ergot and pituitary extract being avoided. Constant observation is demanded until labor finally develops and the fetus, if possible, is expelled spontaneously. Post-partum bleeding must be watched for and, following the delivery of the placenta, the uterus irrigated with hot 1 per cent. dilution of liquor cresolis or salt solution and the uterus, vagina and cervix firmly packed with 10 per cent. iodoform gauze. In hospital practice, with the mother in good condition and the membranes available for rupture, a dilating bag may be introduced and gradually distended, thus securing dilatation of the cervix and pressure on the placenta. With membranes unavailable and cervix resisting, prompt abdominal section will give best results for mother and child. Davis' experience with this comprises sixteen cases, "The method of operation consisted in opening the abdomen, turning out the uterus, incising it and immediately removing its contents. It was interesting to observe how completely hemorrhage ceased when the uterus was emptied. The uterine cavity was then thoroughly irrigated with hot sterile salt solution and packed firmly with 10 per cent. iodoform gauze carried through the cervix into the vagina. The uterus and abdomen were closed in the usual manner. The vagina was sponged out with mercuric chloride solution and firmly tamponed with sterile or mercuric chloride gauze. During the operation the patient received intravenous saline transfusion, and strychnine, digitalin and atropine were given hypodermatically." All the mothers recovered, as did six of the children.—Jour. A. M. A., July 25, 1914.

QUININE IN SYPHILIS

About fourteen years ago Breitmann, of St. Petersburg, noted marked improvement in secondary and tertiary luetic lesions in patients, that had a malarial infection at the same time, and who were taking quinine. In those days he attributed the beneficial effect to the removal of the malarial poison or to the alterative properties of quinine. More recently, since a relationship between plasmodia, trypanosomes and various spirilla is known to exist and arsenic has been found capable of combating malaria as well as syphilis, Breitmann thinks of the possibility of a direct action of quinine on specific conditions. The author also found that while 105 Cc. of water are required to dissolve three grams of quinine, 6 Cc. of water will dissolve a combination of 3 Gm. of quinine and 2 Gm. of antipyrine. The solubility of quinine is thus increased seventeen to eighteen times and it is absorbed with greater facility. The mixture may be used subcutaneously in much smaller doses, than those employed for quinine alone. Breitmann observed no untoward effects and other authors confirm the efficacy of the remedy in malaria. The author's prolonged experience with the preparation and especially his recent observations point to remedy as valuable in the symptomatic treatment of lues and suggests further investigation. He injects a syringeful of a mixture of 2 Gm. of antipyrine and 3 Gm. quinine hydrochloride, dissolved in 6 Cc. of water, once a day as often as is indicated by the requirements of the individual case.—Therap. Monatshefte, No. 7, 1914.

QUININE TREATMENT OF HYDROPHOBIA

D. L. Harris discusses eight cases of hydrophobia treated by him in St. Louis. Due to opposition of several lay publications and certain members of the medical profession, there has arisen a belief that no such disease exists. It is hoped that the brief clinical review of seven deaths may, in a measure, add strength to the evidence of the existence of hydrophobia. Seven cases are reported completely as to onset, development, pathological examinations and results. Post-mortem examinations were made in six of the seven cases. In five of them no Negri bodies were found; in one the Negri bodies were large and abundant. Brain substance from each case was injected into two or more rabbits, and all of these without exception developed a paralysis typical of the disease and died. Negri bodies were abundant in the brain of every animal. The period of incubation averaged from twelve to thirty-five days. Only one case, giving typical symptoms, is described in which injections of quinine and chloral hydrated were given as suggested by Moon. This patient recovered. The spinal fluid of the patient was injected into animals, none of which showed any symptoms of rabies. This does not, however, in the light of previous literature, preclude the possibility that this case was really hydrophobia. The cell-free spinal fluid is rarely infectious in rabies. Although only further use can determine the value of quinine in hydrophobia, the experiments of Moon, together with this report, seem to support this conclusion.—Jour. A. M. A.

SALVARSAN IN HERPES ZOSTER OPHTHALMICUS

In two cases of herpes zoster ophthalmicus, which Gebb, of Greifswald, had occasion to see, he injected salvarsan and neosalvarsan instead of using the ordinary methods of treatment, which are purely symptomatic and are not capable of shortening the course of the disease. The benefits derived from the arsenic preparation were so striking as to induce the author to make this communication in order that salvarsan may be tried in other forms of zoster and thus determine whether it is to be retained as a remedy for this condition.

In the first case, a man of sixty-three with severe herpes zoster ophthalmicus on the right side and involving the cornea, two intravenous injections of salvarsan were made. 0.2 Gm. was given on the first day of treatment and 0.3 Gm. on the sixth. As early as forty-eight hours after the first injection distinct improvement, both subjective and objective, was evident. On the fourth day, the swelling had decreased considerably and only remnants of the vesicles were to be seen, while the deep ulcerations, noted at the first examination, were beginning to heal. By the eleventh day the skin condition was entirely cured. The corneal process was, however, not so favorably influenced. Ulcers formed, required weeks of treatment, and finally produced a rather dense scar.

The second case, a woman of fifty-eight, having a left herpes ophthalmicus, without corneal involvement; Wassermann, as in the preceding case, negative. She was given 0.45 Gm. neosalvarsan intravenously on the first and fourth day of observation. Again improvement became manifest in forty-eight hours. In four days almost all the vesicles were healing and on the seventh day no subjective symptoms remained, and faintly red areas only indicated the original site of the lesion.

In regard to an explanation of the rapid curative effect, produced by salvarsan in the skin condition existing in these two patients, two possibilities occur to Gebb. One is that herpes zoster is an infectious disease, an idea entertained by many clinicians, and that salvarsan exerts its specific bactericidal or trypanolytic power, as it does in trypanosomiasis, bubonic plague, relapsing fever, etc. The other possibility is that the results obtained are due to the fact that by means of salvarsan arsenic is administered in a form and in quantities, hitherto not feasible.—Med. Klinik, No. 26, 1914.

AMEBIC DYSENTERY IN CHILDREN

L. R. De Buys, of New Orleans, writes that amebic dysentery was relatively rare in children, not because they were not susceptible to it but because they were not apt to be exposed. The sources of infection are water, fruits and green vegetables. Seven cases were cited, two of which were treated with large doses of ipecac, as much as 280 grains being given. Five cases were treated with emetine given hypodermically in doses of two-thirds to one grain daily, and as much as five grains in six days. The prompt effect of emetine both in causing the blood and ameba to disappear from the stools within two to five days after the first dose, was remarkable. Emetine, he states, is harmless even in large doses, and the results in effecting a cure with it cannot be duplicated with any other treatment of the disease.

Prescriptions

Chronic Gastritis:

Liq. Strychninæ (B. P.)	♏iij
Acidi Hydrochlorici Dil.	♏iv
Tinct. Aurantii	f. ℥ss
Glyceritæ Pepsinæ	℥j
Spt. Chloroformi	♏x
Aquæ	ad. f. ℥j

M. Sig.: One dose three times a day after meals.

Scarlet Fever:

To produce sweating in scarlet fever or measles with dryness of the skin and diminished reaction of urine Hoyt recommends the following:

Tinct. Aconiti	♏xlviij
Liq. Potassii Citrat	f. ℥iss
Spt. Aetheris Nitrosi	ad. f. ℥iij

M. Sig.: One teaspoonful every three hours for an adult.

Infantile Albuminuria:

Strontii Lactatis	℥iv
Syr. Aurantii Amari	f. ℥j
Aquæ Destillatæ	f. ℥iij

M. Sig.: A dessertspoonful morning and night.

—Comby.

Decubitus:

Balsami Peruviani	℥ij
Iodoformi	℥j
Lanum	℥iv
Petrolati	℥iv

Chronic Orchitis:

Potasii Iodidi	grn. xl.
Ichthyolis	f. ℥ij
Lanum	℥iv
Olei Lavandulæ	gtt. iv

M. Sig.: Apply freely two or three times daily.

Erythema Intertrigo:

The following may be used as a dusting powder.

Hydrarg. Chloridi Mitis	grn. xx
Lycopodii	℥ij

M. Sig.: Dusting Powder.

Smoker's Heart:

Adonidini	grn. iiss
Ammonii Carbonatis	grn. xlv.
Camphoræ	grn. xv

M. Div. in pulv. (vel. caps. gelat.) No. xxx.
Sig.: One three times daily.

Endometritis:

Ichthyolis	℥j
Tinct. Iodi	f. ℥iij
Glycerit. Hydrastis	f. ℥v
Glycerit. Boroglycerini	℥vjss

M. Sig.: Apply on tampons.

—Candler.

Stomatitis:

Phenolis	gtt. viij
Sodii Bicarbonatis	℥ij
Glycerini	f. ℥iv
Aquæ	ad. f. ℥iv

M. Sig.: Use as a mouth wash.

Laryngismus Stridulus:

The following combination is said to be a valuable antispasmodic:

Potassii Bromidi	℥ij
Chloralis Hydrati	grn. xxxij
Syr. Aurantii Cort	f. ℥j
Aquæ Menth. Pip	f. ℥j

M. Sig.: One teaspoonful every half hour.

—Hughes.

Bronchial Asthma:

Sodii Iodidi	
Tinct. Belladonnæ Fol	
Tinct. Hyoscyami	
Tinct. Lobeliæ	āā f. ℥ij
Syr. Pruni Virg	ad. f. ℥iij

M. Sig.: One teaspoonful in water four times a day.

—Swan.

Cerebral Hyperemia:

Tinct. Belladonnæ	gtt. x
Fl. Ext. Ergotæ	f. ℥v
Potassii Iodidi	℥vij
Syr. Amygdalæ	f. ℥ij
Aquæ	ad. f. ℥iv

M. Sig.: One teaspoonful in water after meals and at bedtime.

—Blair.

Prurigo:

Acidi Hydrocyanici Dil	f. ℥ij
Sodii Boratis	℥j
Aquæ Rosæ	f. ℥viij

M. Sig.: Apply locally.

—Fox.

Acne Rosacea:

The following, known as Kummerfeld's Lotion, has been recommended:

Sulphuris Praecip	℥j
Pulv. Camphoræ	grn. x
Pulv. Tragacanthæ	grn. xx
Aq. Calcis	f. ℥ij
Aq. Rosæ	f. ℥ij

M. Sig.: Shake. Apply every few hours.

Acute Gastritis:

For the nausea and acidity in acute gastritis the following prescription has often proved helpful in the hands of G. M. Niles:

Spt. Amygdalæ Amaræ	℥ij
Resorcinolis	grn. x
Lac. Magnesiæ	ad. ℥ij

Dysentery:

For the painful tenesmus the local application of opium and belladonna in suppository is said to be efficacious:

Opii Pulveris	grn. j
Ext. Belladonnæ Fol	grn. ss
Olei Theobromatis	℥ss

M. et ft. suppositoria No. x.
Sig.: One inserted in rectum every three to six hours.

Tinea Favus.

Acidi Salicylici	℥ij
Acidi Chrysophanici	℥ij
Lanum	℥x
Petrolati	℥vij

M. Sig.: Remove the crusts, and rub in the ointment for fifteen minutes at night.

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FOR THE GENERAL PRACTITIONER
PRESENTING A
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AUGUST, 1914

EDITOR'S NOTES

The Treatment of Cardiac Weakness in Pneumonia

In order to prevent circulatory disturbances in acute pneumonia or to correct them if they are at hand, one must desert the empirical procedures of the past and allow the facts, that have been determined by clinical and bacteriological investigation, to dominate one's therapeutic measures. The entire attention must not be centered on the heart, for it is just as important to carefully observe the peripheral vessels, especially the arteries. In this connection, Romberg has shown by experiments with the pneumococcus of Fraenkel and the bacillus pyocyaneus that circulatory disturbances, attributed formerly to the heart alone, are intimately connected with a change in the vasomotor system, the latter being affected almost to the point of paralysis by the injurious action of the toxins on the center in the medulla.

In deciding upon a form of treatment for pneumonia, we must keep in mind that besides a weakened condition of the heart, we have dilated peripheral vessels to deal with. Intoxication takes place first. This leads to cardiac weakness with changes in the right heart, changes in the myocardium, heart thrombi and vasomotor paralysis. To these, the obstruction in the pulmonary circulation is added. Luckily the intoxication lasts only a short time, but its influence on heart and vessels is injurious and when these are once affected, the treatment must necessarily be radical, prompt and stimulating.

After these preliminary remarks Henry L. Elsner in his article on pneumonia in Therapeutische Monatshefte, No. 7, 1914, goes on to say that he is distinctly opposed to all coaltar products in pneumonia and that no antipyretic except mild hydrotherapy is to be recommended.

Nitroglycerin with its power to dilate the peripheral vessels and its depressing effect on the vagus is dangerous in pneumonia, when vasomotor paralysis has already ensued. If advanced arterial disease is coexistent with the pulmonary condition, nitroglycerin may help the heart to overcome peripheral resistance, but the chances for recovery in such cases are very slight. Blood pressure is readily reduced, the pulse slows down for a time and then stops.

In plethoric individuals with high blood pressure and marked pulmonary congestion, Sajous considers veratrum viride and bromides in large doses of benefit, as he believes they tend to force more blood into the splanchnic area, while the lungs and peripheral organs are depleted. Elsner has occasionally succeeded in relieving the subjective symptoms of pneumonia in chronic nephritics with arterial disease in this way, but the routine use of veratrum is not to be considered. Its antipyretic action as well as its depressing influence on the heart are dangerous and fail to have the slightest effect on the inflammatory process in the lungs.

The remedy, which Elsner prescribes from the beginning in all cases of pneumonia is caffeine sodium benzoate in doses of 0.03 to 0.09 Gm. (½ to 1½ grn.) preferably subcutaneously. When extreme cardiac weakness is evident or a collapse seems imminent, larger doses 0.12 to 0.36 Gm. (2 to 6 grn.) together with ethereal stimulants four to six times in twenty-four hours, are indicated. Elsner has frequently succeeded in carrying a patient through the critical stage by giving 3 to 4 fluidounces of strong coffee per rectum and subsequently administering salt solution and coffee by Murphy's drop method, for several hours if the rectum remains receptive. Caffeine stimulates the vasomotor centers in the medulla and raises pressure because it contracts the vessels. The pulse becomes somewhat more rapid in connection with this action, the cardiac muscle contracts more efficiently and urinary secretion is increased. While caffeine is given, it is essential to supply the body with an abundance of water. The rectal drop method is the most practical for this purpose. Henry was the first to recommend hypodermoclyses of normal salt solution in pneumonia. His good results have

frequently been confirmed by Elsner. (Normal salt sol. = 3.0 to 500.0.)

Leading therapeutists differ regarding the value of digitalis in pneumonia. Petresco's large doses (4 to 8 Gm. of powdered digitalis in twenty-four hours) has not met with favor. Forchheimer observed no beneficial effects with this method, while the cumulative action was such as he hoped never to see again. Carhart thinks digitalis increases dyspnea, causes the heart to overact, contracts the capillaries and thus produces still greater stasis in the lungs. Elsner's ideas in respect to this drug in pneumonia are that it should be given: (a) from the beginning, if the heart is not to be relied upon, (b) at any time in the course of the disease when cardiac weakness appears, (c) whenever it is evident that unusual demands are being made on the heart as exemplified by an abnormally full, hard pulse, increased heart action, strong precordial pulsation, dyspnea. It is questionable, of course, whether all cases with high tension pulse and strong precordial pulsation should receive digitalis; accompanying conditions must be taken into consideration: if advanced arteriosclerosis and contracting kidney are present, it is better to give one of the vasodilators for a time, observe the effect and act according to necessity. If partial heart block exists, digitalis is contraindicated, but when the bundle of His is completely destroyed, digitalis may be given, because in that case the ventricles are no longer under auricular control and as digitalis enhances their strength, a larger amount of blood is pumped through the body.

Elsner agrees with Hare that digitalis is less potent in pneumonia than in valvular disease, because in an infectious disease, accompanied by fever and myocardial degeneration, digitalis cannot exhibit its complete physiological action. Cases of pneumonia in which digitalis is especially efficient are, in the opinion of Hare, those in which circulatory disturbances are due to fatigue of the heart, rather than to weakened cardiac muscle as a result of toxic influence.

A reliable digitalis preparation increases the strength and duration of the systole and raises arterial tension. The indications for digitalis are a weak first sound at the apex, a small, rapid, occasionally irregular pulse and a weak second pulmonic sound. With an inefficient heart and marked vascular relaxation, atropine in conjunction with digitalis may reestablish vascular tone and circulatory balance. The average dose of digitalis is 15 minims of the tincture. All digitalis preparations containing the active principle digitoxin, are serviceable. No one derivative of digitalis, however, is indicated in desperate conditions, in which immediate action is desirable. Cases that come under observation in the second stage with dilatation of the right heart and cardiac action inhibited by the large amount of blood the heart is called upon to hold, are best treated with large doses of digitalis; occasionally venesection and purgation may be resorted to. Elsner has given digitalis every half hour with success in such cases. The poisonous action of the concentrated digitoxin is necessary in these desperate conditions and occasionally patients get well, who appeared to be in a hopeless state.

In plethoric individuals with myocardial degeneration, digitalis is contraindicated.

At times, the effect of temperature and intoxication on the central nervous system may interfere with the action of digitalis. Under such conditions, strychnine is capable of aiding digitalis, but if the former is to have any specific effect on the vasomotor centers, larger doses than those usually prescribed are requisite. Some authors are rather skeptical in regard to the value of strychnine in pneumonia, but it is still advocated by many and there are probably very few cases in general practice, in which strychnine is not used.

Adrenalin chloride is of great efficacy in the cardiac weakness of pneumonia. Rye-Smith and Beddard claim that it is the most powerful circulatory stimulant at our command. It is best to give it intramuscularly or to add it to a hypodermoclysis of salt solution. For edema of the lungs, other preparations are preferable, as adrenalin may aggravate the condition. The glycosuria, which readily occurs during the administration of adrenalin, is not to be considered a contraindication. One to thirty drops of a 1:1000 solution may be given every one, two or three hours according to symptoms, but only for a limited period on account of the danger of liver necrosis.

Fraenkel regards 1 Mg. of strophanthin as a powerful cardiac stimulant and very effective when immediate action is required. Elsner considers the preparation dangerous if digitalis has previously been given for several days or in large doses. Strophanthin must always be injected intravenously and care must be taken to prevent the preparation from entering surrounding structures, as it irritates connective tissue. Stone and Liebermeister believe that some serious cases can be kept alive with strophanthin until the toxins

have been eliminated and the crisis is passed. Stone gives one dose of 1 Mg. and repeats it within twenty-four hours. If the remedy acts favorably, the heart action becomes stronger, arterial tension rises and more urine is excreted. The diuretic action is especially valuable according to Stone, because it causes poisonous substances to be cast off more rapidly than they would be otherwise. Vickery has also found strophanthin to be of remarkable benefit in some cases and believes it can prolong life for a length of time sufficient to allow the patient to reach the crisis, if the latter seems near. Elsner's experiences with strophanthin have not been sufficient to justify conclusions; two of his cases died suddenly after its use, but both had taken digitalis beforehand. He thinks unsatisfactory results would probably be infrequent, if a standardized preparation were always used. The Boehringer strophanthin he states is of this nature and the ampules made by this firm are reliable in every way.

As the weakness of the heart in pneumonia becomes more pronounced, camphor must be given in increasing doses. Whenever digitalis is indicated, 20 per cent. camphor oil with a little ether added, is also administered subcutaneously. In alarming conditions 0.18 to 0.3 Gm. (3 to 5 grn.) every one or two or three hours may be injected. Elsner has used as much as 2.4 Gm. (36 grn.) camphor in twenty-four hours for three or four days. In young children, in which subcutaneous medication is not practical, camphor may be prescribed for internal use in 0.03 Gm. (½ grn.) doses with sugar and benzoic acid.

Sparteine sulphate has been recommended in pneumonia on account of its action on the right ventricle, but the results obtained with it the author states are usually disappointing.

During the critical stage of pneumonia, Elsner advocates the use of volatile stimulants. In order to obtain the desired effect, that is, continuous stimulation, with remedies of this class, it is necessary to repeat them before the action of the preceding dose has ceased. Thus fifteen drops of compound spirits of ether, aromatic spirits of ammonia, tincture of lavender and tincture of valerian have been given every fifteen minutes continuously day and night until increased tension manifested itself in the pulse and longer diastoles pointed to stronger heart action. Should gastric disturbances occur, which is rarely the case, the ether may be omitted for a time and whiskey substituted or the dose of lavender and ammonia may be doubled. The administration of the mixture at such short intervals does not seem to annoy the patients; they swallow it automatically.

The alcoholic stimulant, upon which Elsner relies is the real Hungarian Tokay wine. A tablespoonful may be given every half hour. If the wine happens to be administered simultaneously with the ethereal stimulants, just mentioned, the patient gets the benefit of ethereal oil given in strong alcohol.

Blood pressure observations are essential in treating the heart in pneumonia. They give us some information about the vessels and tell us a great deal about the heart muscle. Every decided drop in pressure is a bad omen. Energetic stimulation is in order, if the blood pressure in millimeters of mercury is below the pulse rate. There are cases of pneumonia, complicated by arteriosclerosis and nephritis, in which arterial tension remains very high during the first two or three days of the disease. In these patients the heart, which is already more or less degenerated, becomes fatigued very readily and remedies like nitroglycerin must be used to dilate the vessels and relieve the overburdened heart. If hypertrophy of the left ventricle is also present, veratrum viride seems justified, but it, as well as the nitrites and aconitine, should be given for a limited period only and the most careful observation during their administration is imperative. Occasionally in cases of pneumonia with high blood pressure and a feeble myocardium not in an advanced stage of degeneration, one can improve conditions by combining nitroglycerin and digitalis, the dose of each depending on the individual case.

Sydenham regarded venesection as very valuable in treating pneumonia. Many authors still advocate it in robust, full blooded patients in the early stages. Unquestionably there are cases with dilatation of the right heart, in which venesection does wonders. As a rule they are plethoric individuals, often alcoholic, fat and bloated, and have prominent superficial veins. Whenever the heart is laboring with an undue amount of blood, blood-letting should be contemplated as a therapeutic procedure. Special indications are dilated right heart, cyanosis, dyspnea, contracted pupils, dilated superficial veins and marked intoxication. In alcoholics with pneumonia, cardiac insufficiency and edema of the lungs are very frequent after the third day. These are good cases for venesection. Although it must be acknowledged that venesection improves the subjective symptoms of practically every pneumonic case, when the heart begins to weaken, Elsner

does not consider it safe to recommend it in all cases. It should, however, be undertaken more frequently than it ordinarily is. The removal of 200 to 400 Cc. of blood is usually sufficient.

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Treatment of Leg Ulcers

A. Ravogli, of Cincinnati, gives some practical points on leg ulcers. Their causes may be traumatism, constant irritation, mechanical, bacterial, dynamic, electrical action, or all combined, producing infiltration and molecular disintegration of tissues and resulting ulcer. In many cases occupation requiring long standing, etc., may be the cause. The relation of ulcer to varicose veins is still in dispute as it does not follow varicosity in all cases. The gouty diathesis, trophoneuroses, and local asphyxias have been suggested as causes. Bacteria have been found in Ravogli's examination, most frequently *B. pyocyaneus*. The process is one of infiltration and softening of tissues cutting off the nutrition, invasion of bacteria, gangrene and sloughing. The three periods of necrosis, sloughing and reparation should guide the treatment. The first period is marked by acute inflammatory symptoms. The patients usually go to the druggist and ask for a salve which relieves the pain but makes the condition worse, by obstructing the sloughing off of the gangrenous masses retaining the bacteria-laden secretion and increasing the inflammation. The best application for this period is water at 80 or 90 degrees temperature and containing some antiseptic preparation. The author uses sodium bicarbonate or biborate in the water. If the ulcers are very foul, solutions of mercuric chloride from 1 to 5,000 to 1 to 2,000, either as a continuous bath or in moist compresses. But as soon as the odor has been overcome he goes back to the bicarbonate or biborate solution. In some cases, especially when *B. pyocyaneus* is present he has found phenol useful, in warm water. If the patient can be recumbent with the leg elevated the pain and inflammatory symptoms will subside sooner and the ulcers show a clean surface with healthy granulations. In this condition it needs to be dressed with some remedy which will cover and protect the granulations and remove the secretions and keep the surface sterile. One of the oldest standbys has been a mixture of castor oil and from 10 to 50 per cent. of balsam of Peru. When this is irritant he changes it for some more suitable application. Many remedies which favor the granulation delay the formation of epithelium, and for this remedies producing oxygen seem to be called for. For many years he has used diachylon salve containing 1 gram of ichthyol to the ounce. He still uses this in obstinate cases, but in ordinary cases he finds useful petrolatum with 2 per cent. boric acid on a piece of lint changed twice a day. Various preparations have been recommended by authors some of which are mentioned. The author objects to the use of thick paste. During the process of repair it must be aided by proper measures. Internal treatment must be given according to the condition of the patient. In his hospital service he always advises the use of potassium iodide knowing that phlebitis is often originated, maintained and aggravated by a luetic taint. An alkaline purgative is recommended when constipation is present and there is some gouty tendency. In case of anemia from poor nutrition proper remedies should be given. After recovery to prevent relapse he advises the patients to bathe the legs twice a day, to massage the affected leg with 2 per cent. alcoholic solution of phenol and when dry dust it with rice powder or talcum powder, also to wear during the daytime a well-fitting elastic stocking.—Jour. A. M. A., Aug. 1, 1914.

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Tumor Extract in Malignant Neoplasms

Luckenbein writes that he has used tumor extract in forty cases of sarcoma and carcinoma, and thinks it a valuable therapeutic agent. He demonstrated that the invading cells absorb the nourishment intended for the invaded host by virtue of a ferment which they possess. In addition to robbing the organism of its nutrition, they cause harm by giving off into the system the products of their metabolism (possibly also of their secretory activity) and those of the breaking down of the invaded tissue. The organism defends itself by the production of a ferment and a battle is waged. In most cases of carcinoma, the ferment produced by the organism is insufficient to combat the invading cancer cells and after a more or less prolonged struggle, the patient usually dies. When tumor extract is injected into a patient having sarcoma or carcinoma, it causes these specific ferments to be formed, and the patients usually show rapid improvement. The side of the tumors is affected; they become smaller and lend themselves more readily to operative treatment. After a time, however, the improvement is not as rapid and as marked as at the beginning. The danger of anaphylaxis he believes can be disregarded.—Münch. med. Woch., May 12, 1914.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Influence of Santonin and Digitalis on the Human Eye.—H. Schulz has studied the influence of these drugs on the sensitiveness of vision toward certain colors. His method was an improved one whereby he could make accurate measurements of slight changes in the acuity of vision for colors. The studies were carried out on healthy adults. Readings of the sensitiveness were taken before the administration of the drug by mouth, and at ten-minute intervals thereafter, for two hours. A dose of 0.2 Gm. of sodium santoninate produced an increased sensitiveness to violet ten minutes after it was taken. This soon passed over into a decidedly decreased sensitiveness. For yellow the conditions were exactly reversed—a primary diminution and a secondary increase in sensitiveness. Toward blue and red the sensitiveness was altered in the same way as toward violet, while green gave a reaction the opposite to that for red. Using an official tincture of digitalis, the sensitiveness for green was almost immediately reduced when a dose of ten drops was given orally. When as little as one or two drops was given, it was possible to show a prompt and marked primary increase in the sensitiveness for green which soon passed over into the decreased sensitiveness. In one case it was necessary to reduce the dose to half a drop in order to obtain this primary effect. A striking fact was that not only was this the smallest dose sufficient to cause the phenomenon in normal persons, but the effect was observed in a relatively short time after the administration of the dose—in about ten minutes, being most marked in twenty minutes. Tests with red gave results the reverse of those obtained with green.—Deutsch. med. Woch., May 14, 1914, per N. Y. Med. Jour.

A National Leprosarium.—W. C. Rucker, of Washington, D. C., says the problem of the control of leprosy presents many perplexities. We believe that we have discovered its cause, but its mode of entry into the organism, the effects of the different strains and its incubation period are as yet unknown. The rôle of rodents and insects in its transmission has been suspected, but we have no positive knowledge and there is no certain means of diagnosis in its earlier stages. No satisfactory method of treatment has been devised. The period of its greatest infectivity is unknown. We know that there is no racial immunity, but that it exists in all parts of the globe and that cleanliness and segregation are our only weapons against it. Add to this the facts that individual and community fear of the disease amounts to a very leprophobia, that there are several well-established foci in the country, and that it is slowly but surely on the increase, many cases being probably unreported. When lepers are segregated and properly cared for, the disease dies out, and it has been made notifiable in most of the states in three of which leprosariums have been established. The expense per capita, however, is very great, owing to the small number in each. This is attributable in part to the general desire for the establishment of a national leprosarium, and another factor in bringing about this feeling among thinking men is the inhuman treatment which lepers receive on account of the common fear of the disease. Many other countries of the world have leprosariums, though far less wealthy than the United States. The number at present with us is comparatively small, and if the disease is fearlessly attacked its control will be relatively easy. It spreads very slowly, but when it has once spread it never recedes unless active measures are employed. For this reason Rucker offers a rough draft of what seems to be appropriate legislation on the subject calling for the foundation of a national leprosarium where lepers could be sent from any state and properly treated.—Jour. A. M. A., July 25, 1914.

Contraindications to Narcosis.—Stange writes that patients with mitral lesions, in general, bear narcosis well; those with lesions of the aortic valves or of the aorta, poorly, especially if the heart muscle itself is weakened or diseased. In determining the advisability of giving a general anesthetic, a functional test of the sufficiency of the cardiac muscle would be most valuable. Practically, however, this is not an easy matter. If the patient is able to climb three flights of stairs without undue dyspnea, the heart muscle may be considered normally strong. Less than this, however, usually suffices to render a general anesthetic permissible. The blood-pressure is not a useful indicator, since patients with a pressure of less than 60 Mm. or more than 200 Mm. often bear the anesthetic well. The same is true of both large and small hearts, determined radioscopically.

The most useful test, according to the author, is a respiratory one. A normal individual can easily hold his breath for 30-40 seconds; one with an impaired myocardium only 10-20 seconds. The test is done as follows: The patient sits comfortably in a chair and makes a moderately deep inspiration. The physician lightly compresses his nostrils and directs him to hold his breath as long as possible. Anyone with a normal myocardium can comfortably hold his breath for 30 seconds and then breathe easily; if the myocardium is impaired, 20 seconds is his limit and is followed by dyspnea. Even patients with tuberculosis, bronchitis or pleuritic effusions can still hold their breath for 25-30 seconds. The writer concludes that no one, who is unable to hold his breath for 20 seconds, should be subjected to a general anesthetic.—Berl. klin. Woch., No. 14, 1914.

The Acetone Treatment of Inoperable Cancer.—The palliative treatment of inoperable cancer naturally calls for due exhibition of such remedies as have shown themselves of value individually in antagonizing some one or more symptoms, local or systemic, directed both to the tumors and their metastases and to the constitutional condition. In special institutions this may be carried out in great detail. Combinations and successions of individual measures may, through inhibiting proliferation and the pain, fetor and secretion, as well as by holding in check the cachetic ravages, lengthen the expectation of life in a certain number of inmates to a period hardly conceivable. We do not refer entirely to such resources as are actual rivals of the knife (radiotherapy, radium), but to minor measures as well. Among the latter is the acetone treatment, introduced by Gellhorn, of St. Louis, some four or more years ago. Vogt, of Dresden, reviews 100 personal cases of inoperable cancer treated by Gellhorn's method. After a thorough curettage, which forms a crateriform opening, pure, undiluted acetone is allowed to remain in the latter for twenty minutes: the cavity is then cleansed and tamponed, and the operation is repeated every few days. The immediate effect of the acetone is to produce a seemingly normal granulating surface.—Med. Record, July 25, 1914.

HE HAS

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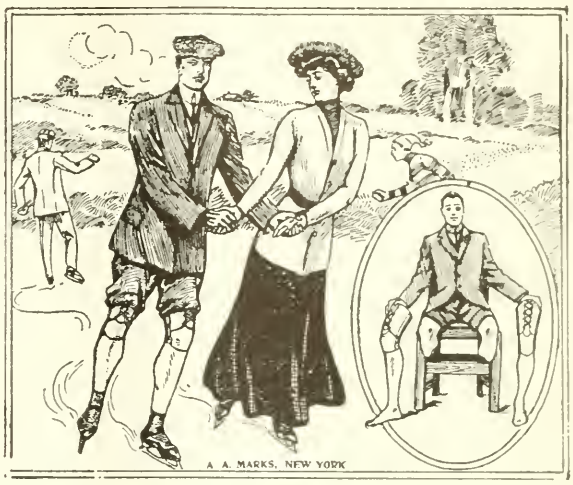

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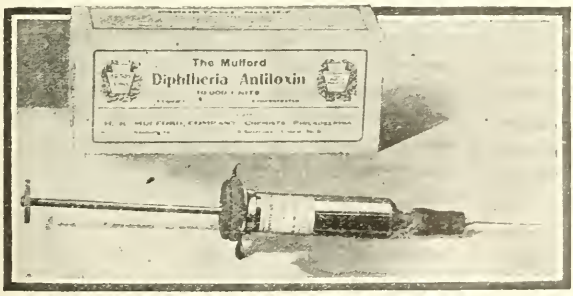

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Miscellany

Now instructive, now amusing—but always interesting and worth reading

Our readers will gain much that may be of great value to them by looking over the advertising pages of this issue. There are a number of very generous offers that may be taken advantage of by merely addressing a post card to the advertiser and mentioning MERCK'S ARCHIVES.

INFLUENCE OF IODINE ON FERTILIZATION.—Oswald Loeb and Bernhard Zoeppritz draw from their experiments the following conclusions: 1. Iodine salts and iodine derivatives of fatty acids which liberate the iodide ion regularly exert a selective action on the genital apparatus. 2. Both male and female animals were sterile, although their *libido* and *facultas coeundi* were retained. 3. The sterilizing action can be removed by stopping the iodides. 4. The sterilizing doses lie below those which are toxic or which otherwise produce marked effects, such as influencing the general health or the nutrition. 5. Gravid animals regularly aborted. 6. It remains undetermined whether we are dealing with a direct iodine action or with an indirect one through an action on the thyroid gland. The animals used were mice and rabbits.—Deutsch. med. Woch.

THE THERAPEUTICS OF CATULLUS.—In his twenty-third poem, Catallus starts out to flay Furius, who was too miserly to board a flea or a spider, but who lived with a father and a stepmother whose teeth could chew up even flint. While heaping opprobrium on this parsimonius family, Catullus, in his own inimitable way, pictures the perfect health they enjoy—a health built on a very spare diet. "A pretty life you lead with your father and your father's wooden spouse; and no wonder, for you are all in good health; you digest well, you fear nothing, neither fire, nor heavy losses, nor impious deeds, nor treacherous poison, nor any perilous chances." The bliss of this economical family did not spring from sentimental or moral sources, but was purely physical and depended on a spare diet. Their bodies were more dried than horn, or if anything else there is more arid, by heat and by cold and hunger. They were comfortable and happy, being free from sweat, from spittle, from mucus, and unpleasant snivel at the nose. Think of it, ye gourmands, whose fancies rove from roast to boiled, who revel in ice water, ice cream, champagne frappé in summer, in whiskey and hot water in winter. Cut out the liquids and the solids too, if you would be comfortably dry in skin, pharynx, and nasal mucous membrane.

But Catullus goes deeper with his preventive medicine. Familiarized, by dear experience, with the gorging of Roman epicures, he says: "To this cleanliness add the still cleaner fact, that your posteriors are neater than a salt cellar; nor do you void anything from them ten times in a year, *and when you do* it is harder than a bean or than pebbles, so that if you rub and crumble it in your hand, you can never dirty a finger." No hemorrhoids, no congestion of the portal circulation, no catarrhal jaundice, no ascites can attack Furius or his economical relatives; the starvation method of effecting intestinal antisepsis is far more potent than leptandrin, betanaphthol, or naphthalein.

If the opinions expressed in this poem rested on the medical teachings of his day, Catullus was well advised; if founded on personal observation of the physical conditions or diseases which plagued the luxurious feeders or heavy drinkers of Rome, he was a sharp clinician. In any event, being a wit and a poet, he eulogizes spare diet as the friend of the "Particle of Divine breath," leaving it free to forge the bright gems of poetry and song. With no sneer, does Catullus urge Furius to be satisfied with what he has; not to despise the precious advantages of poverty, nor think little of them, and to cease to pray, as he is wont, for a hundred thousand sesterces ($4,000.00).—Canadian Jour. of Med. & Surg.

HE UNRAVELED THE MYSTERY

A girl had gone to a dinner in New York with her "steady." The young man noticed a speck of what appeared to be lint on her shoulder. When she wasn't looking he attempted to knock it off with his finger. After several futile attempts he took hold of the lint and started to pull it off. He unraveled several yards of the fleecy stuff and when he seemed to have all of it, threw the wad under the table. That night the girl told her mother she had had a perfectly lovely time. "But," she added, "I have just been lying here in bed, mother, and wondering what became of my union suit."

HOMO SAPIENS.—The discussion as to whether man is yet ready to stand on his hind legs, beginning at a clinic at Detroit and drifting thence to Philadelphia, has at last broken into the lay press. The attempt seems to be made by some to minimize the time that has elapsed since man came down out of the trees and crawled up out of the caves and to insist therefore that the anterior abdominal wall is not equal to the task of holding the viscera in place. It seems to us, however, that these gynecologists, with their eyes, and frequently their fingers, fixed upon the contents of the female abdomen have overlooked the environment of the animal and thereby missed the most important factor. When man first became erect he was anticipating the physical conquest of the world and this he accomplished with his wits, his strong right arm, and his equally strong abdominal muscles which could lift and carry ponderous stones and mighty logs. We have no reason to suspect enteroptosis in paleolithic man or his only less active and muscular wife.

But the man of Neanderthal and the man of the cave of Eugis could not possibly foresee the pleasure that subsequent generations would take in their multitudinous fashions in deformity. He could not anticipate the board of the flathead Indian; he could not see the tightly bound feet of certain classes of the Chinese, and least of all could he imagine the kaleidoscopic changes in the corset of the European woman and her descendants since the courtesan of ancient Greece first appealed to this artifice to exaggerate the width of her hips.

As for the men it certainly must be acknowledged that it is as unnatural for a man to sit all day at a desk or to stand all day at a machine as it is for a leopard to live all day in a cage. And it is also true that when either the man or the leopard receives and devours as a daily ration the amount of food that would be necessary for a healthy animal exercising freely in the open, obesity, fatty degeneration and autointoxication with their attendant pathologies will attack them both—and to the detriment of the abdominal wall in both cases.

We are on our hind legs to stay. It is a very satisfactory position in which to do the work of the world as it is now done and as it is likely to be done for some time. The solution of the problem which those gentlemen who are concerned about enteroptosis are presenting to us is not a return to quadrupedal progression, which is unsuited to the twentieth century world, but a drastic reform of our Roman habits of eating and drinking, and a modification to utter extinction of those of our costumes derived from the women of ancient Greece who gained ascendancy over the tribal statesmen by the allurements of their figures.—Lancet-Clinic.

THE ORGANIC FORMS OF SULPHUR frequently succeed better in cases of eczematous dermatitis than when the ordinary precipitated sulphur is used.

THE TOMB OF AVICENNA.—Sir William Osler has recently suggested that the tomb of Avicenna should be restored. An account of a pilgrimage to the last resting place of that famous philosopher and physician at Hamadan is therefore especially opportune. It is contained in the July number of the "St. Bartholomew's Hospital Journal." The pilgrim was Dr. A. R. Neligan, physician to H.B.M.'s Legation, Teheran. Abu Ali al Hussein ibn Abdullah abn Sina, to give the old Arab physician his full name, was born near Bokhara in 980 A.D. At sixteen, after studying mathematics, philosophy, metaphysics, and medicine, he was already practising as a doctor. At seventeen he was appointed physician to the Amir of Bokhara. This post gave him access to the celebrated library of Bokhara, and thus enabled him to pursue his studies. After travelling in northeastern Persia he settled at Hamadan, where he spent the rest of his life. He became physician to the ruling prince, Shams-ed-Dowleh. But, says Dr. Neligan, like many a Persian doctor of the present day, Avicenna took to politics and became a minister. The sea of Persian politics has always been particularly stormy, and therefore it is not surprising that Avicenna was often in peril of his life, and was at one time thrown into prison. After a time he made his escape from Hamadan and took refuge in Isfahan, where the governor welcomed him and made him his physician. In that capacity he made several campaigns, and in the course of one of these, which was directed against Hamadan, he was attacked by colic, and thus it came to pass that he died in the town from which he had fled, and was buried there. Wherever Avicenna was and in whatever circumstances he found himself he was an indefatigable writer. His varied adventures did not prevent his going on with his great treatise, the *Kanun*, or Canon of Medicine. In that work, which was divided into five books, Avicenna collected all that was best in the medical knowledge of his time. It was the text-book at the universities of Louvain and Montpellier up to the middle of the seventeenth century, and it is read in Persia, Arabia, and India at the present day. It was taught in the royal university at Teheran as recently as twenty years ago. It was translated into Hebrew and Latin, and the Latin version went through thirty editions. Avicenna is said to have written in all more than 100 books, most of them dealing with medicine, but others with logic, philosophy, music, natural history, astronomy, and physics. His grave, says Dr. Neligan, is in a simple brick building near the steep banks of the river which flows through Hamadan. A little mausoleum of fire-burnt bricks with a mud dome stands at one end of a small compound, surrounded by a low stone and mud wall. The building is square, but inside there are small arches at each corner, which give it the appearance of being eight-sided. The internal measurements are as follows: Floor, 15 feet by 15 feet; apex of dome from floor, 16 feet. The floor is paved with large square bricks. Immediately opposite the doorway is the tombstone, 49 inches long, 21 inches wide, and 24 inches high. The inscription is carved in large, bold characters. It begins with the usual invocation, "To Him who is and does not die"; this is followed by a verse from the Koran reciting the virtues of the Almighty. Then come lines of verse, in the translation of which, as well as of the verses that follow, Dr. Neligan acknowledges the help of his friend Moin-ul-Vazareh: "Worthy testimony upon earth of the omnipotence and wisdom of God, Abu Ali Sina sprang from non-existence into being in the year 373. He had mastered the sum total of knowledge in 391; in 427 he bade farewell to this transitory world." Then comes the usual conclusion to epitaphs on the graves of Mohammedan sages or celebrated men: "The death of Sheikh Abu Ali Sina, may his tomb be surrounded by light! 427."—Brit. Med. Jour.

OBSTETRICS IN THE SEVENTEENTH CENTURY.—In the St. Thomas's Hospital Gazette, Dr. John S. Fairbairn gives an interesting account of Smellie and the obstetrics of his time. In the seventeenth century the midwife had practically the sole command of the lying-in room; a surgeon was called in only when extensive mutilations of the child were necessary for delivery. Smellie was born, probably, at Lanark, though the honor has been claimed for Lesmahagow, in 1697. He began to practise there at the age of twenty-three, and nineteen years later he moved to London for the purpose of acquiring greater knowledge. Disappointed with London he went to Paris, to work under Grégoire, who was considered the best teacher of the day. With him, too, Smellie was disappointed. He returned to London and began to practise, as what was then elegantly called a man-midwife, in 1738 or 1739. From his writings it can be gathered that in 1741 he had begun to teach. He used "dummies," which are said by a contemporary writer to have been composed of "real human bones arm'd with fine smooth leather and stuff'd with an agreeable soft substance."

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"The *Uterus Externum* and *Internum* [!a man-midwife might surely be supposed to know something of gender] are made to contract and dilate according to the Difficulty intended for the Delivery. The Children for these Machines are likewise excellently Contriv'd, they having all the Motions of the Joints. Their Craniums are so formed as to give way to any force exerted and are so elastik that the Pressure is no sooner taken off than they return to their natural Equalities."

Smellie was not content to demonstrate on "dummies"; he worked out a scheme by which poor women could be attended in their homes gratuitously by him and his pupils, on whom, in addition to the tuition fees, he levied tribute for the support of the patients. Smellie was highly esteemed as a teacher, but he is said to have been coarse in his person and unpleasing in his manners. He was made the subject of the frank criticism of that rude age, especially on the part of the midwives, who looked upon him as a trespasser on their preserves. Douglas speaks of him as "having monstrous hands, fit only to hold horses by the nose whilst they are shod by the farrier," and describes him as "a raw-boned large-handed man, no more fit for the business than a ploughman is for a dancing master." The women were, as was to be expected, more spiteful. Smellie had suggested that the man-midwife should wear "a commodious dress—namely, a loose washing nightgown, which he may have in readiness when he is going to deliver," with loose sleeves that could easily be rolled up, adding that "where he is obliged to alter his position a sheet ought to be tucked around him or an apron put on." One of the advantages claimed for this covering was that it enabled the man-midwife to conceal about his person instruments which might frighten the patient. These preparations gave Mrs. Nihell, one of the jealous midwives, the opportunity of gracefully referring to "the delicate fist of a great horse godmother of a he midwife, however softened his figure might be by his pocket nightgown being of flowered calicot or his cap of office tied with pink or silver ribbon." Smellie numbered many of the distinguished men of the time among his friends, notably Richard Mead and Tobias Smollett. He left London in 1759 owing to a breakdown in health, and retired to Lanark, where he spent the last four years of his life writing up the records of his cases. He died in 1763 at the age of 66.—Brit. Med. Jour.

A Tuberculosis Census of thousands of churches in various parts of the country will be taken in September, under the direction of The National Association for the Study and Prevention of Tuberculosis. The census will be part of the preparation for the Fifth Annual Tuberculosis Day to be observed during the week of November 29th.

The ministers of several thousand churches will be asked to report on the number of deaths from tuberculosis in the last year, the number of living cases in their parishes on September 1st, the number of deaths from all causes, and the number of members or communicants. These figures will be made the basis of an educational campaign, which will culminate in the Tuberculosis Day movement, for which occasion sermon and lecture outlines and other forms of tuberculosis literature will be distributed free to ministers.

Last year nearly 75,000 churches, schools, and other bodies took part in the Tuberculosis Day observance. The movement had the endorsement of leading church officials of every denomination. More than 1200 anti-tuberculosis societies scattered all over the country will work this year to make Tuberculosis Day a success.

Stocks and Babies

"What's the baby crying for now?" asked the head of the house from the depth of his paper.

"He wants his own way," answered the mother.

And with his mind on the latest stock quotations Hubby replied: "Well, if it's his, why don't you let him have it?" —July Lippincott's.

The Albuminous Content of Serous Fluids. —Within recent years considerable attention has been paid to the cytology of transudates and exudates, but relatively little has been learned regarding the chemical differences of these fluids. The albuminous content of the latter has been made the subject of a special study by Mosny, Javal, and Dumont, who report their results in La Presse Médicale, June 24, 1914. The investigation of the amount of albumin contained in serous accumulations in more than fifty patients furnished data of eminent practical value in diagnosis. The method employed was to precipitate the albumin and then weigh it. The most striking differences were between the transudates and the exudates.

Serofibrinous pleurisy is characterized by the high content in albumin which varies between 40 and 66 grams per liter. There is no difference between primary or secondary tuberculous pleurisy and that of streptococcal origin as regards the albumin content. In purulent pleurisy the albumin attains a high figure, approaching that of the blood, and fluctuating about the figure 70 grams. There is no relation between the hemorrhagic character of a fluid and its albuminous coefficient. In a recurring infectious exudate the albumin figure remains stationary. In pleurisy of cancerous origin the amount of albumin in the fluid is comparable to that of the microbic exudates. Likewise, the hemorrhagic condition of the fluid is not accompanied by any change in the albuminous content.

The greatest contrast exists as regards the relative content in albumin between the transudates and the exudates. The figure for the former is from 3 to 26 grams per liter. The rule is laid down that any serous fluid containing less than 30 grams of albumin per liter must be regarded as a transudate. In the so-called cardiac pleurisies which have the typical clinical aspect of an inflammatory pleurisy the pleural accumulations have a polynucleosis approaching that of a purulent exudate, but resemble the transudates in their albuminous content. This is a distinction of considerable diagnostic value.

The transudates and the exudates of the peritoneal cavity follow the same laws as those of the pleura. The ascites of cirrhosis of the liver or of heart disease is hypoalbuminous (less than 35 grams per liter), while that of tuberculous peritonitis is hyperalbuminous (more than 40 grams per liter). In peritoneal cancer the albumin figure is likewise high.

The question now arises whether the isolation of special types of albumin in serous fluids furnishes any diagnostic criteria. It has been known for some time that there exists in certain of these fluids a small quantity of an albumin that is precipitated in the cold by very dilute acetic acid. This is a nucleoalbumin which has been

closely studied by Patein and which is designated by his name. It is the presence of this substance upon which is based the reaction of Rivalta, namely, transudates do not yield any precipitate with slightly acidulated water, while exudates give a marked reaction. Mosny, Javal, and Dumont find that whereas in the case of infectious exudates this reaction always occurs, it nevertheless fails in the case of so-called cardiac pleurisies.

Albuminodiagnosis cannot replace cytodiagnosis, although the two methods give identical results in the infectious pleurisies and in the cases of pure hydrothorax. But in the cancerous exudates and in the so-called cardiac pleurisies the former method has a value peculiarly its own. In the exudates of cancer there is no characteristic cytology, although occasionally an atypical cell may furnish a diagnostic clue. In some cases of cardiac pleurisy there may be a neutrophile polynucleosis, an eosinphilia, or even a lymphocytosis. These cellular changes, which are the result of pleural irritation rather than of secondary infection, are not accompanied by any change in the albumin content which remains low, and by reason of this fact enables one to make an exact diagnosis of the nature of the fluid. Sufficient data have been gathered, however, to show that the albuminodiagnosis of serous fluids is of real clinical value.—Med. Record.

Undertake no operation for abscess or other swelling about the chest without determining that it does not proceed from an intrathoracic source or being prepared to deal with such a finding.—Amer. Jour. Surg.

Causes of Insanity.—F. W. Mott notes that the discovery of spirochetes in twelve out of seventy brains of general paralytics, has dispelled any doubt as to syphilis being the essential cause of this disease. Of the total admissions to the asylums of the County of London every year about 10 per cent. are general paralytics. The principal causes of mental deficiency may be summed up in the fact that as regards the functions of the organ of mind, "like tends to beget like." Mentally defective children, particularly if more than one occurs in a family are usually the offspring of parents who are imbecile or of low grade mentality. The causes of the psychoses or true insanity in which so far no adequate explanation by morphological changes in the brain exists, fall into two groups: (1) the toxic, and (2) the degenerative (neuropathic), but the two conditions are more often than not combined. The toxic causes are (a) exogenous, and (b) endogenous. The characteristic true alcoholic psychosis regarded by Kraepelin as chronic delirium tremens is not a common class of case in the asylums, although alcoholism plays an important part in the degeneracy of a stock. The neuropathic inheritance and disorders of the functions of the sexual glands play a dominant part in the causation of the true insanities. There is a marked correlation between the age at onset of insanity and the critical periods of sexual life. It is an interesting fact that in certain types of insanity, especially the primary dementia of adolescence, there occur in quite young females a great diminution of ova, signs of absence of maturation of the ova, and marked fibrosis of the gland. The author considers this to be further evidence of anticipation, by which the children of insane parents are affected at a much earlier age than the parents and in a more intense form. Modern social conditions tend to repress or suppress the natural physiological gratification of the sexual passion, espe-

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cially in women. Its suppression is one of the causes of insanity, especially in subjects with the neuropathic taint, for it tends to continued mental depression and the development of an anxiety-neurosis which, in its turn, leads to a disorder of the vital functions and a disturbance of the biochemical relations of the whole body, causing an autointoxication. Thus a vicious circle may be established by the interaction of a disordered mind and a disordered body. Dementia præcox is evidence in most cases of an ancestral neuropathic taint. Up to the time of puberty the majority of patients affected by dementia præcox have been intelligent individuals and full of promise. There is not a congenital feeblemindedness but some germinal defect, possibly of durability of the sexual glands, which has a profound influence on the function of the brain, causing at first mental disorder, and finally dementia.—Lancet.

The Very Idea

Two suburban mothers met on the train one day, and the topic of their conversation was their daughters.

"How did your daughter pass her examination for a position as teacher?" asked one.

"Pass!" was the answer. "She didn't pass at all. Maybe you wouldn't believe it, but they asked that girl about things that happened long before she was born."

Ultraviolet Light.—The value of ultraviolet light in certain skin affections has been demonstrated, but it has not been shown that its benefits are due to direct germicidal action, but may be due to irritant action on the tissues. Since the cornea is relatively transparent to ultraviolet light, it follows that if it should be found impossible by this means to destroy bacteria within corneal tissue without injuring it, the same negative results might be expected with other tissues. To throw light on this question, F. H. Verhoeff, of Boston, reports (Jour. A. M. A., March 7) the results of an investigation made by Louis Bell and himself on the effect of ultraviolet light on the normal eye, advantage being taken of the powerful light sources and apparatus. He reviews Hertel's experiments and results, pointing out wherein he thinks they may be erroneous. The light sources used by him were chiefly the magnetic arc and the quartz mercury lamp, but the cadmium zinc arc used by Hertel was also tested. "A number of experiments were first made by injecting staphylococci or pneumococci into the corneas of rabbits, and after twenty-four hours exposing the resulting abscesses to the ultraviolet light. Healing did not seem to be hastened, but since recovery ultimately occurred, as it did also in the control eyes, these experiments are not regarded as sufficiently conclusive, and are not given in detail." Other experiments, however, which are detailed are more conclusive. The general results prove that ultraviolet light cannot under any conditions destroy bacteria within the cornea, even when that is perfectly transparent, without severely injuring the corneal tissue. The exposures would have to be impracticably prolonged to destroy bacteria in corneal abscess or ulcer, even with the sacrifice of corneal tissue, and the heating effect would exceed the ultraviolet light chemical action. It is doubtful also whether ultraviolet light of such intensity could be made available for therapeutic purposes. From these results he concludes that ultraviolet light possesses no therapeutic value for the destruction of bacteria within the animal tissues.

Mental Defect is the Cause of Male Inefficiency, which leads to desertion and nonsupport. The women who are "down and out" are so defective as to be incapable of such simple work as darning or mending. Prostitutes and most criminals have long been known to be in the feeble-minded class. That accidents are related to mental defect and lack of forethought is shown by the fact that the feeble-minded usually have a large scar, often many, by the further fact that men with forethought who take out accident insurance meet with very few accidents, probably less than any other class of the population. Criminals are rarely free of scars and some are almost covered with them. Automobile accidents are now being traced to mental defect of some sort in the chauffeurs, who are either drunk or slow to decide in an emergency or lacking in forethought or judgment in taking chances. We are at last getting down to bedrock in the explanation of unemployment and poverty. Untold tens of thousands of inefficients are walking the street looking for work but can find nothing they can do, while tens of thousands of employers are vainly searching for competent labor. There are hundreds of thousands of housekeepers actually suffering in health because of lack of assistants, and of the hundreds of thousands of women out of work scarcely any have sense enough to take the jobs. Domestic service requires a high degree of intelligence, and its remuneration is becoming correspondingly high for the competent.—Amer. Medicine.

Look out for the edge of the lesions in cases of chronic cicatricial ulceration of the lower extremities. Cases of lichen planus hypertrophicus have often been mistaken for syphilis, and *vice versa*.—Urologic Rev.

Parenteral Protein Digestion.—Parenteral protein digestion is defined by V. C. Vaughan, of Ann Arbor, Mich., as the digestion of foreign bodies entering the body by other methods than by the alimentary canal. On a small scale this in constantly happening through the respiratory tract and it may happen that some proteins pass undigested through the intestinal wall and must afterward be disposed of by the ferments of the body cells. In the therapeutic employment of serums and vaccines, undigested protein, sometimes in large amount, is introduced into the circulation and in case of infection living proteins find their way into the body and there grow and multiply, converting the simple soluble proteins of the body into complex foreign proteins. How to control and modify parenteral protein digestion is now one of the big problems of experimental medicine. The body cells feed on the pabulum brought to them by the blood and lymph. Each body cell must split up this protein food in such a way so that it can take up the portion it particularly needs and the agencies by which it does this are known as ferments. Vaughan reviews what has been done in the study of the unicellular organisms to throw light on this subject. After noticing the digestion process in algae and amebae, he speaks of bacteria and says there are two points about bacterial proteases to be emphasized. One is, that their action is delayed by antifebrile drugs and this may explain the action of these medicines. The other is, so far as experimental evidence has gone, no bacterial protease is capable of digesting living protein and this, Vaughan thinks, disposes of the idea that the lesions of the infectious diseases are due to the digestive action of the germs on the body cell. He says that it seems quite certain that in

incubation of infectious disease the process is largely synthetic and constructive, converting the simple proteins of the host into the more complex cellular proteins of the invading organism, and there is consequently no disturbance of health. During the active stage, however, the cells of the host supply the ferment, the process is essentially analytic and destructive, the protein poisons of the invading organisms are set free and the symptoms of disease appear. He reviews also what has been done in the study of leukocytic digestion and the action of leukocytic proteases generally. The leukocytes are constantly supplying the blood with an active protolytic ferment and if there was no regulation of this process, the body would digest itself. There is, however, constantly in the blood an anti-ferment and it seems justifiable to assume that this anti-ferment or antitrypsin of the blood originates in the same way as the antibodies produced by the injection of a ferment into an animal. The blood, he thinks, is a digestive as well as a nutritive fluid and its digestive processes are regulated by some mechanism at present not understood. Parenteral proteolytic ferments are of two kinds, specific and non-specific. The former are normally present in the blood and tissue and their function is to break up foreign proteins; they are, within limits, general proteolytic ferments, like those of the alimentary canal, but the variety of proteins on which they can act is more limited. They constitute the most important factor in racial and individual immunity. The leukoprotease of the polymorphonuclear cells is such a one. Work in the Vaughan laboratory has shown that all proteins contain a poisonous group. In enteral digestion this is partly set free but it is not readily diffusible, and the body is protected by the walls of the alimentary canal and in the process of digestion it is broken up into harmless split products. One of the most important facts developed in the so-called protein sensitization or anaphylaxis is that the nature and activity of cellular ferments may be modified and specific ferments developed, and this explains certain forms of immunity. Where the ferment is destructive to the virus no disease is developed. The study of protein sensitization has improved our knowledge of infection. The pathogenicity of a virus is determined largely by two conditions: First, the virus must be able by the means of its enzymes to feed on the animal protein, and this explains whether or not it can be pathogenic to one or another species. Secondly, the secretions of the body cells must not immediately digest and destroy the invading organism, but the virus multiplies within its host converting the latter into its own structure, and this continues until the body cells becoming sensitized and elaborate ferments, which digest and destroy the foreign protein. When the body cell enzymes act too rapidly the protein poison is set free and endangers life. This Vaughan says, is a brief and incomplete statement of the relation of cellular digestion to immunity and disease.—Jour. A. M. A., Aug. 1, 1914.

The Movement to Abolish Coroners is taking shape all over the country, at least medical men are thinking in that direction. The "coroner's quest" was a very necessary thing before the days of scientific medicine, and when death by violence was a common danger. The "crown," which means the people made an inquiry, and various means were taken to determine the cause of death. A layman could do that as well as a doctor, but now it is different. To determine the exact cause of death, the coroner finds it necessary to employ experts to decide the matter for him. There is then no longer any reason for the existence of the lay coroner, who in time will be replaced by a medical examiner. The coroner's jury will be abolished as a useless expense, for it returns a verdict as instructed. The details of the exact relationship between the medical examiner and the police department and district attorney will have to be worked out according to local conditions. The main point is to have a skilled pathologist or a board of them to examine into the cause of death in all cases in which a physician has not certified the facts, or in which murder is suspected. The plan will permit the board to summon witnesses and seems to be practicable and economical. It will make the "coroner's quest" as valuable as originally. After the cause of death is determined the matter is ended. If violence is proved, the police must find the culprit. They do that now anyhow, and the coroner's work is useless.—Amer. Medicine.

If you expect to have to pass a very tight stricture, first distend the urethra with sterile olive oil and massage it gently backward toward the posterior part.—Urologic Rev.

Possible Sources of Acidosis in Infancy.—A condition of acidosis in the diseases of early infancy is familiar to the modern pediatrist. It may be relative acidosis due to a deficiency in the supply of alkali at a period when bases are particularly needed to meet the requirements of a growing organism; or the acidosis may be a positive rather than a relative phenomenon and be attributable to a production of undue amounts of acid products which for some reason escape further oxidation or destruction in the economy. In the event of the existence of the latter condition one must call to mind, first of all, those examples of acid compounds that are known to arise under such circumstances. Most familiar are the lower members of the fatty acid series, such as the volatile formic, acetic and butyric acids. We would not imply that these are all uniformly non-metabolizable in the body, for acetic acid and its salts are as a rule readily oxidized. Formic acid, once making its appearance, is not so readily destroyed. To account for the possible origin of such compounds would not be difficult, inasmuch as they frequently represent products of the activity of micro-organisms in the gastro-intestinal canal, which is notably liable to excessive bacterial invasion in the disorders of infancy. So far as these substances escape oxidation they are excreted in the urine. Aron and Franz have examined the urine of numerous sucklings in the Children's Clinic at the University of Breslau, without finding more than merest traces of volatile fatty acids therein. The quantity was not increased by an enrichment of the diet in fats; and even in acute disturbances of nutrition, in dyspepsias and alimentary intoxications, as an accompaniment of which they might have been expected to arise, the results were negative. Another organic acid resistant to metabolic destruction is oxalic acid. It has been realized for some time that this arises as a product of the fermentative decomposition of carbohydrates; and such a mode of origin has been postulated for those cases in which oxaluria could not be explained as the result of the ingestion of food (as rhubarb, spinach, etc.) said to contain considerable preformed oxalic acid. According to Aron and Franz, the urine of infants brought up on such oxalate-free foods as milk and milk mixtures almost invariably contains oxalic acid.

This is assumed to have either a fermentative origin in the alimentary canal, or an endogenous one in intermediary metabolism. Additions of cane-sugar or other nutrient carbohydrates to the diet seem to augment somewhat the urinary output of oxalic acid. No increase could be associated, however, with acute nutritive disturbances. The facts, negative and positive, here recorded point to a field for investigation that may yield fruitful suggestion with respect to the etiology of some of the obscure acidoses.—Jour. A. M. A.

BE EXTREMELY CAUTIOUS in giving your consent to the marriage of recent sufferers from gonococcal infection. Before doing so have a thorough urethroscopic examination of the entire urethra made, as well as a careful bacteriological investigation of the urethral secretions, secured through prostatic massage and the instillation of silver, and centrifuged urine.—Urologic Rev.

THE PSYCHIC VALUES OF LIGHT, SHADE, FORM, AND COLOR.—The human feelings, emotions, and sensations are profoundly influenced by light, shade, form and color, and it therefore follows that the methods of illumination should be in consonance with such sensations, or at least should offend them as little as possible. In an interesting paper read before the Illuminating Engineering Society and published in their Transactions for October, F. Park Lewis brings out these truths. Referring to the mental and moral effects of light and shadow, Lewis says: "The difference produced upon our state of mind by the glaring brilliancy of an unshaded Welsbach light, especially an old one, or the soft glow of even a yellow illumination is felt by every one, although by no means always recognized as a cause of nervous irritation. In some of the most persistent cases of eyestrain after the physician has employed the highest degree of skill in determining the correct combination of lenses to be employed it will be found that the discomfort is due to a badly placed lamp, to the improper use or absence of shades, to an insufficiency or an excess of light, to some specular reflection, or other local fault in the illumination about which he has not been advised. There is probably no one simple element that more deeply concerns the welfare of the people than correct lighting."

Putting aside the esthetic effects of light and color which in themselves have a very considerable influence upon health through the nervous system, the harm done by too glaring lighting, by badly placed lights, or by insufficiency of light to the vision itself is very great. In these days the fault is generally a too glaring light or an excess of light. The object seems to be to have as many brilliant white lights as possible, and even in public libraries shaded lights are not infrequently conspicuous by their absence. There is little doubt that a considerable amount of the nervous irritation which is so prevalent is largely due to or greatly aggravated by present-day methods of lighting.—Med. Record.

LESIONS OF THE MUCOUS MEMBRANE of the mouth are more common in lupus erythematosus than they were formerly believed to be, while in lichen planus they are very common.—Urologic Rev.

PLAGUE AND THE PUBLIC.—The present condition of the plague outbreak in New Orleans reveals an attitude that in certain ways reflects great credit upon the medical profession. Within a comparatively few years there was another such epidemic, but in that very community the facts were suppressed until the disease had become firmly established. The United States government finally had to take charge, almost by force. Since then there has been widespread popular dissemination of scientific information, concerning contagious diseases in particular. This is due to the efforts of physicians, both in the laboratory and in the field. They found how insects and other forms of life carried disease to human beings. It was discovered that the rat was the primary source of danger and that the rat-flea could take up the plague bacilli. This knowledge has been spread far and wide by popular lectures, by magazine articles, and by newspaper paragraphs. By this time it is as common property as the fact that malaria and yellow fever are carried by mosquitoes.

In New Orleans we can see the results of our efforts. Instead of a panic developing, the citizens quietly realized the seriousness of the situation and handed the control of the epidemic over to the United States Public Health Service, knowing that all precautions would be taken. The result is that instead of hearing, in much detail, how the neighboring towns are enforcing "shotgun" quarantines against all travelers, we read that such activities are beging directed against the rats, and not our fellow beings. When one contrasts such a quiet appreciation of affairs with DeFoe's description of the great London epidemic, where hundreds died and thousands fled the city, one can realize the great advances that have been made. Community sanitation and hygiene are indeed the striking improvements of this age.—N. Y. Med. Jour.

FARADAY AND PENSIONS.—When a pension was voted to Faraday for his remarkable addition to scientific knowledge, from which untold millions of pounds sterling have inured, an ignorant lord was selected to announce the grant, but informed Faraday that he did not think much of this science business, and added: "Now, really, Faraday, it's all a humbug anyway, isn't it?" The insulted chemist refused the pension until other better informed officials apologized humbly for the impertinence of "his lordship."

In an old dictionary—two huge volumes of an early edition of Dr. Johnson's—he defines a pension as "a sum of money paid to a hireling for treason to his country," but he afterward accepted a pension which was worthily bestowed. And now we observe in the London letter, Jour. A. M. A. for June 20, page 1,978, that Sir Ronald Ross, K.C.B., F.R.S., the well-known prover that malaria is conveyed by mosquitoes, has asked of parliament a grant or pension. He says he is following Jenner who got $50,000 in 1802, and $100,000 more in 1807, for his discovery of vaccination against smallpox. Not that Sir Ronald claims that he needs the pension—"it is not a question of charity, but of public honor and indebtedness."

His action is being widely discussed as it opens the doors to all kinds of claims for scientists, literary men and artistic genius for indebtedness. He suggests a standing fund of not more than $100,000 a year to meet these claims. We hope that he will get it for his seven years' work in hot India, which made the Panama Canal possible and has made the Roman Campagna a safe and productive farming region.

The poem of praise and thanksgiving he wrote on the Sunday of his great discovery was quoted

in the last address he made in public, May, 1913, is worthy of memorizing:

"This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At His command,

"Seeking His secret deed,
With tears and toiling breath,
I find thy cunning seeds,
O, million-murdering death.

"I know this little thing
A myriad men will save,
O Death, where is thy sting,
Thy victory, O Grave!"

Dr. Ross is both poet and naturalist. All great men are poets. The poet is a maker by the very meaning of the word.

We hope the poet, Sir Ronald Ross, will be honored during his lifetime by the great kingdom which owes him so much.—Indianapolis Med. Jour.

Radium Therapeutics.—The July number of our esteemed contemporary "The Prescriber" is devoted to the subject of Radium Therapeutics. Articles on the latest developments of the subject are given, including the following:

"The Therapeutics of Radium," by J. R. Riddell, L.R.C.P., L.R.C.S.Ed. (Glasgow).
"Radium in Skin Diseases," by W. Knowsley Sibley, M.D. (London).
"Recent Developments in Radium Therapy," by W. Hope Fowler, M.B., F.R.C.S.Ed. (Edinburgh).
"The Pharmacy of Radium and its Substitutes," by Thos. Stephenson, Ph.C., F.R.S.E. (Examiner to the Pharmaceutical Society).

The Tonic Effect of Sympathy with Others.—Some years ago there appeared in the newspapers an open letter in which a suffering and helpless woman asked aid in securing a law to permit invalids pronounced incurable after a medical consultation to be painlessly put to death. Naturally, the letter attracted attention and reawakened the old question whether or not physicians are ever justified in shortening life. It is of interest, then, to note that the writer of the letter now rejoices at the non-fulfilment of her wish. She has lived to experience how much life may hold even in the face of bodily helplessness and how greatly hope brightens prospects which seem at first so unfavorable. She tells of having received thousands of letters from all over the world containing messages of sympathy and approbation for her daring attempt to secure a modification of present-day laws protective of life. Some of these invalids, she says, have since written her of their cure and of their gladness that conservatism and old-fashioned legislation had intervened between themselves and their impatience. One of these correspondents, who was sure that hope was dead for her and who eagerly desired the "finis" at the end of the chapter, has written of her complete recovery and how much more life now means to her since she has "passed through the shadow of the valley of desolation." This correspondence has proved, as might well be expected, a stimulant and a tonic to the invalid. She feels not only that her contact with others has given them a renewed interest in life, but also that even her mistaken suggestion of a revolutionary change in law has not been without its good effect, since it has drawn together in bonds of deep human sympathy, invalids who felt their helplessness yet were helped by the knowledge of their common lot. It was the touch of nature that makes the whole world kin—and kind. Probably nothing is more stimulating and genuinely tonic to sufferers, especially those with chronic ailments, than the feeling that in spite of their own helplessness they themselves can still be helpful to others. The Shut-in Society in this country has made life more bearable for many persons who are confined to their rooms or their houses. Nothing disturbs a certain class of patients so much as to be constantly in contact with those who are in good health and strength and whom they can scarcely help but envy. To be brought into touch with those for whom they themselves can feel is a precious source of consolation and uplift. Pity is a luxury to be enjoyed, but no human being likes to be pitied or to feel that he is an object of pity. To be conscious of some advantage in one's situation over that of others is of itself an alleviation for many sicknesses.—Jour. A. M. A.

In passing flexible instruments always keep the penis on the stretch, thus obliterating curves and folds of the urethra.

The Abderhalden Test.—C. M. Echols, of Milwaukee, says that the reason for the ready acceptance of the Abderhalden test by the profession was that its basic principles had already been established by the work of others. He notes, however, the small number of workers that have used it extensively in America and asks the reason why. The majority that have been questioned think the test too unreliable to be of value and seldom of vital importance to the patient as it might be in other conditions than pregnancy. He mentions a few points in technic among which are: the advisability of marking the different tubes with indelible ink, having the principal control always contain the inactivated serum from the patient's own blood, seeing that the placenta preparation contains no dialyzable substance reacting to ninhydrin, and treating the test and control exactly alike in every respect. Bearing in mind these and some other minor precautions, he summarizes his own experience as follows: "First, the pregnant women of the series practically all gave positive reactions. In fact, the last fifty pregnant women of the series all gave positive reactions except one patient who was about two weeks pregnant (as proved by an abortion about two months later). Secondly, in this series about 12 per cent. of non-pregnant persons gave positive reactions. These included several patients just operated on for acute or chronic appendicitis, pus-tubes, fibroids and ovarian cysts." The positive reactions in non-pregnant persons were first attributed to errors of technic, but the proportion has continued to appear in spite of the most painstaking care. According to the results obtained it would appear that the test is of value in a negative sense only, that is, if the patient does not give a positive reaction we can conclude she is not pregnant, while on the other hand with a positive reaction we can only say she is probably pregnant. Some of the contributory causes to the dissatisfaction with the test, in his opinion, are: that it is difficult and time-consuming and not studied for the general laboratory, but should be made only where one is constantly performing it and with fresh materials. Many observers have noted the presence in the blood of filtrable substances reacting to ninhydrin under certain conditions and these have been noted as sources of error.

THE SELECTION OF A SOPORIFIC,

especially if for women and children, is no light matter, and, therefore, when a physician is offered an agent of this class with the assurance that it possesses every therapeutic advantage of the older somnifacients and without any of their frequently encountered untoward effects — then surely it is well worth his while to investigate such claims, and particularly so when they are based on nearly forty years of practical bed-side experience.

THESE ARE THE CLAIMS MADE IN BEHALF OF

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that it is the ideal SEDATIVE, SOPORIFIC, and that its value is not impaired by the fear of habit-formation nor immediate evil results.

PASADYNE (Daniel) is merely a distinctive name for a thoroughly reliable Concentrated Tincture of Passiflora Incarnata.

Doctor, in insomnia, hypercerebration, spinal irritation and allied conditions, PASADYNE (Daniel) is one agent you can fully depend upon to produce rest.

SAMPLES AND LITERATURE SUPPLIED TO PHYSICIANS PAYING EXPRESS CHARGES

Laboratory of JOHN B. DANIEL, Atlanta, Ga.

The use of the patients' inactivated serum will largely eliminate this. The presence in normal blood of non-specific proteolytic enzymes having a feeble power of digesting proteins parenterally, is, he believes, generally conceded. It seems reasonable that such, under certain conditions other than pregnancy, might cause sufficient digestion of placental albumin to vitiate the test or render it dubious. It is sometimes difficult to procure a sufficient quantity of serum free of any trace of hemolysis, especially if it has had to be transported for some distance. The use of parchment tubes or thimbles as filters introduces an unstable and inconstant quantity which may lead to unavoidable errors. Echols concludes as follows: "The dialysis test for pregnancy in its present stage of development is of value chiefly in a negative sense only; that is, if a woman fails to give a positive reaction, she is not pregnant. If, on the other hand, she gives a positive reaction, we can only say she is probably pregnant; for with our present technic, from 10 to 15 per cent. of non-pregnant persons will give positive reactions."—Jour. A. M. A., Aug. 1, 1914.

Most small naevi can be satisfactorily dealt with by electrolysis, but larger ones do better with the solid carbonic acid.—Urologic Rev.

Literary Culture.—In order that the physician may be a preceptor of the people he requires more than his technical training. He needs a certain amount of enthusiasm and of altruism, and at least a superficial knowledge of many matters not directly concerned with the healing of the halt. In the imparting of information youthfulness of spirit and of ideals may be as valuable as profundity—breadth of view and generalization may be as helpful as intensive specialization. One of the unfortunate things about medicine is the tendency toward narrowness which occurs after the years of active preparation are over. The field is so extensive that a single lifetime does not suffice to acquaint one with all that may be growing therein. The laboratory worker finds it dufficult to digest even the literature relating to his more immediate problems—upon other subjects, even those closely related to his own, he may become less and less well informed. The busy practitioner is fortunate if he has time for more than the merest abstracts of clinical literature—and if he has time for more the constant drain upon his sympathies saps strength and energy. The family doctor of the old school was apt to become constantly more and more valuable to his neighbors. His work trained him in the humanities and his relationships with people could become so intimate that his advice was sought upon all sorts of non-medical matters. But medical knowledge is constantly advancing, and the physician of to day needs to be much more widely informed than was the case thirty or forty years ago.—Cleveland Med. Jour.

Many cases of so-called eczema, both in children and in adults, have their origin in an unrecognized scabies.—Urologic Rev.

The Alleged Immortality of Living Substance is being discussed and believed although there is no evidence whatever that anything can live forever. Some trees live two or three thousand years, but as far as we know there comes a time of senility when they perish. Certain plants have been kept alive artificially for several centuries by replanting cuttings, but no one yet knows whether this process can be continued indefinitely. In the vast majority of instances unicellular organisms become senile after a certain number of divisions and then cease to divide unless rejuvenated by coalescence with a similar cell. In the higher organisms the individual which protects and nourishes the rejunevated cell must specialize for the duty—and this is sex differentiation. Jacques Loeb has shown that certain low forms of life which ordinarily depend upon sexual reproduction, can be made to reproduce without the male (parthenogentically), but he has not shown that this can be done indefinitely. In nature parthenogenesis must alternate with sexual reproduction. Carrel has been able to keep animal tissues alive and make the cells reproduce themselves for a while outside of a body which can make the same cells do it for a century or more. This achievement of the laboratory has been incorrectly heralded as an evidence of tissue immortality, but he has only succeeded in doing outside of the body what normally occurs in it. It is yet to be proved that we can prevent senility and prolong the reproductive capacity of cells indefinitely.—Amer. Medicine.

Always examine any scalp patch, said to be "eczema" very carefully in a child. It is probably ringworm.

The Biochemistry of Bacteria.—Bacteria are known to resemble other organized forms of cellular protoplasm in a very general way in respect to the essential chemical compounds that enter into their make-up. It has been ascertained that they contain various proteins, nucleic acid derivatives, carbohydrates, phosphatids (lecithins) and representatives of the group of "lipoids" now designated as sterols, of which cholesterol is a familiar example. Bacteria are classified at present on the basis of their behavior in various mediums and also on their tinctorial properties as shown by the reaction with a few widely used stains. Both of these features of bacterial response are essentially chemical; and the differential staining of the micro-organisms is clearly an expression of the occurrence of some unlike chemical compounds in the bodies of the bacteria. We have hitherto referred to Tamura's demonstration that in certain strains, such as the tubercle bacillus and the *Mycobacterium lacticola*, for example, the acid-fast phenomena are associated with the presence of a characteristic substance, the higher alcohol mykol, in place of the more familiar cholesterol. He has now further demonstrated other chemical differences between unlike forms of bacteria, namely, the two species already mentioned and the bacillus of diphtheria, which is biologically and morphologically quite distinct from them. The diphtheria organisms are not "acid-fasts," and accordingly mykol was not found in them. They differ also from the tubercle bacilli and the *Mycobacterium lacticola* with respect to the character of the phosphatids which they yield and in the solubilities of their protein components. The amino-acid units of the latter also show variations, the proteins of the bacillus of diphtheria being, by comparison with others, rich in tyrosin and poor in phenylalanin. In all of the three species investigated, however, the Gram-staining seems to depend on the presence of lipoid substances. Such facts represent a further advance toward a comprehensive knowledge of the structural biochemistry of bacteria.—Jour. A. M. A.

Grouped comedones in young children are nearly always due to the application of some oily liniment.—Urologic Review.

Internal Secretions and Dental Caries.—H. P. Pickerill calls attention to the fact that the thyroid, pituitary, and thymus glands may, by their secretions, be capable of influencing the resistance of the teeth to caries, it being possible that each of these glands pours into the circulation substances which affect calcium metabolism and utilization, "and which might be called 'osteogenetic' or 'dentogenetic' hormones." It is a deficiency in the case of each of these secretions which might lead to an increased susceptibility to caries. There is clinical evidence which inclines the author to think that there is a relation between dental caries in children and the condition of thyroid insufficiency. So far this is incapable of proof, for the other possible factors clinically encountered in cases of caries are so frequently present as to obscure the exact bearing of the secretion of the thyroid. Pickerill succeeded in securing one thyroidectomized rabbit which survived the operation for a long enough time to permit of observations. This animal showed a loss of calcium in the feces considerably in excess of that occurring in controls, along with a considerably more complete carbohydrate digestion. The teeth of this animal were well formed and grossly normal except that they were very white and lacked that "fine black deposit which is almost universally present on rodents' and other animals' teeth (and also in many cases on human teeth immune to caries)." The specific gravity of this animal's teeth was slightly below that of controls, and the teeth yielded slightly less ash than normal. The calcium present in these teeth fell $2\frac{1}{6}$ per cent. below the normal of controls. The saliva of the thyroidectomized animal showed slightly reduced alkalinity and contained less calcium than normal. No experiments have been performed to test the influence of the pituitary or thymus, but it would seem that if the latter does play a part it could involve the deciduous teeth only. Pickerill warns against any generalization from either the clinical observations and suggestions or from the experimental findings here reported. —Brit. Med. Jour. per N. Y. Med. Jour.

Ointments are seldom acceptable for use upon the scalp in women, lotions being preferable instead.—Urologic Review.

Colon Stasis.—The subject of colonic toxemia, says J. R. Eastman, of Indianapolis, can be studied under the four headings of (a) colitis; (b) adhesions, membranes and kinks; (c) colon dilatations and visceroptosis, and (d) stasis. Many questions of alimentary toxemia are more or less dependent on these factors. As regards the causes of these conditions those which are more or less commonly found in dogs and can be produced in rabbits, are discussed. Many writers have expressed the belief that plastic adhesions can be produced by toxins in the large intestine and Bassler has described a bacterium to which he ascribes the origin of pericolonic adhesions. Adami also supports the view of a bacterial origin. The clinical consequences of membrane formation are somewhat varied, but this does not prove that they are always responsible for stasis. A delicate vascular form of membrane may exist without constipation in young persons and is found in most every case of chronic appendicitis, which it probably favors. Pericolonic adhesions nearly always give rise to some disturbance and has been able to occasionally relieve colon stasis by division of a surrounding membrane. It seems reasonably fair to say that such membranous adhesions may induce colon stasis and also favor the penetration of bacteria from the bowel, and thus reproduce themselves. Somewhat similar interchange of cause and effect is presented in colon ptosis and seems to be almost constantly associated with it. The treatment must vary according to the peculiarities of each case. Purely medical treatment with petroleum oil, Weir Mitchell feeding according to Coffey's plan and a medical treatment aimed at arrest of intestinal infection, all may have their value, and hygiene, regular vigorous exercise and proper living will do still more. The surgical treatment is not yet fully ready for discussion. Among the methods proposed he mentions those of Coffey and C. A. L. Reed and those of Arbuthnot Lane, whose best known operative exploits are based on Metchnikoff's theory that we are better off without a colon. Whichever method is used should be determined after the abdomen has been opened and explored and not fixed upon before operation. Little is to be expected from very extensive removal of pericolonic membrane. If short-circuiting is done, special care should be exercised in selecting the colon surface to be anastomosed. Anastomosis of the caput-coli at its lowest level with the rectum has all the advantages and eliminates some of the evils of iliocolostomy. The opening of communication should be amply large and the appendix, though normal, should be excised if in the way, as should also the sigmoid, if dilated and very redundant. The improvement following short-circuiting operations is probably due somewhat to the relief of colitis or the associated factors. Direct drainage favors the escape of bacteria-laden secretions which aggravated the colitis, and this is a probability in stasis cases where the colon is not fettered by firm adhesions. Where the colon is not thus hopelessly fettered the purpose of a well-planned short-circuiting operation should be not to put the colon out of commission, but by relief of colitis and pericolitis to put it back into its normal function.—Jour. A. M. A., Aug. 8, 1914.

Ileosigmoidostomy.—C. L. Bonifeld, of Cincinnati, gives case-histories showing the conditions two years after the performance of ileosigmoidostomy. He believes that in certain selected cases the operation is beneficial, as these cases would seem to indicate. The results were more satisfactory with patients who could be occasionally seen and advised as to diet, etc., and he is encouraged to continue performing the operation in properly selected cases for which he believes it has a distinct place in surgery after other methods have failed. Many cases may not reach this point if properly treated when young, and there are still others who may not be cured but can be greatly benefited by exercise and diet and improvement in general health, and particularly the improvement in the nervous functions.—Jour A. M. A.

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THE MEDICAL TREATMENT OF CHOLELITHIASIS

By R. J. Smith, M.D., of Bancroft, Ida.

CHOLANGITIS is an inflammation of the lining mucous membrane of the biliary passages which may involve both large and small ducts. It may or may not be associated with cholecystitis. Cholelithiasis is the result of cholecystitis, is preceded by cholecystitis in the great majority of cases and is often accompanied by it. That is, in many cases, cholecystitis first directs attention to the presence of gallstones. This in effect means that gallstones may be present with no attacks of gallstone colic, until some extraneous cause produces bile stasis, infection and inflammation. This is well brought out in the article by Dr. H. B. Anderson in January ARCHIVES. Surgical treatment is not always successful in curing the trouble. The gallstones present are successfully removed, but owing to the continuance of the cause, are reformed within a few months. A case in point demonstrates this.

Mrs. M. Age, 40 years, operated on for gallstones successfully, applied for examination fourteen months later to the surgeon who performed the operation, who advised a second operation for removal of gallstones that no doubt had reformed. The patient demurred and is now under medical treatment.

Medical treatment should be given every patient after an operation for gallstones to prevent reoccurrence and should be given a fair trial in all cases presenting symptoms of gallstone development. These symptoms as described by Moynihan are as follows: "The patient complains of a fulness, weight and distention or oppression in the epigastrium coming on soon after meals, within one-half to three-quarters of an hour, relieved by belching, and dismissed almost on the instant by vomiting, elicited with remarkable constancy by certain articles of diet, especially those of a "greasy" nature, and dependent rather upon the quality than upon the quantity of food. There is a sensation of great lightness, which, if unrelieved, may become acute pain, from which the patient obtains ease by bending the body forwards, by flexing the right thigh on the abdomen or by loosening the garments which fit tightly to the waist. There is frequently great complaint of "acidity" or heartburn. While the discomfort lasts, the patient may notice a "catch" in his breath, and on deep breathing, may feel an acute stabbing pain, at the costal margin. There may be faintness and nausea, rarely vomiting. A frequent and very early symptom of cholelithiasis is the occurrence during the attack of indigestion of a slight sensation of chilliness. These symptoms may persist for months and years before an attack of severe pain occurs. The cause of the biliary colic is the impaction of the stone in the cystic duct." Moynihan says, "There is, of course, no medical treatment of gallstones." But it is in the prodromal period before an attack of gallstone colic, the symptoms extending over years perhaps, that medical treatment is most successful. And in true gallstone colic, much may be done to render the attacks milder, to reduce their frequency and in time to prevent their occurrence. The patient, judging by his relief from symptoms, is in fact cured.

Cholelithiasis is due to bile stasis, infection and inflammation. Predisposing causes, among which are gluttony, obesity, laziness, childbearing, tight lacing and advancing age, are important etiological factors and a guide to treatment. The patient should live much in the open air, taking plenty of exercise short of fatigue; he should eat less of meats, fats and starches, limiting himself to a little bread, milk, buttermilk, fresh vegetables, fresh fruits. Buttermilk or the true Bulgarian lactic acid bacilli is an important aid to treatment. Intestinal putrefaction is no doubt due, in part at least, to hepatic insufficiency. Invasion of the large intestine by bacteria cause an irritation of the liver resulting in functional insufficiency, this in turn helping to keep up infection of intestine, since the bile is the best intestinal antiseptic. Thus is a vicious circle produced, prolonging and intensifying hepatic disorders. The lactic acid bacillus tends to modify and to prevent intestinal putrefaction. In this connection also, mention should be made of the efficient action of the combined phenolsulphonates in preventing intestinal fermentation.

Enteroptosis should be remedied by a properly fitting abdominal support. The free drinking of a mildly laxative, natural water is necessary. Constipation must be overcome and the alimentary tract kept in the best practicable condition. Judicious starvation for a few days is beneficial. A diet of malted milk may be prescribed in those cases where flatulency is excessive.

The therapeutics of hepatic disorders have been much neglected. There are certain remedies having a special action on the liver, and with their employment, much may be done in the earlier stages of hepatic insufficiency to prevent the development of gallstone attacks.

Chionanthin, from the bark of the root of Chionanthus virginica (fringe-tree) is a valuable hepatic stimulant and alterative. It is as aperient, diuretic and febrifuge. It is as a continued remedy for chronic engorgements that it proves its value. In catarrhal states, in doses of $\frac{1}{6}$ to $\frac{1}{2}$ grn., after meals, three times daily, continued over a prolonged period, it is very efficient. It seems to have almost a specific action in overcoming catarrh of the ducts; it promotes a free flow of bile. In acute congestions, it may be given in conjunction with sodium phosphate and sulphate.

Boldine, the active principle derived from the leaves of peumus boldus, the boldo shrub, a native of Chili, acts as an excitant of the digestive functions and of the biliary secretions. It not alone increases the secretion of the bile, but more specifically, is a regulator of the liver function. It has given good results in hepatic congestion, in hepatic colics, in biliary lithiasis, in bilious affections and in chronic hepatitis. Its curative effects in inflammation and congestion and functional troubles of the liver are well known. Dujardin-Beaumetz says that boldine increases the elimination of urea, augments the secretion of bile, and has a specific action on pathologic conditions of the liver, gradually changing these to normal.

Boldine is best given three times daily after meals in $\frac{1}{3}$ grn. dose.

Inasmuch as there is a deficiency of glycocholic acid in the bile of cholelithiasis, the bile salts should be administered to remedy this deficiency. It is found that boldine acts more beneficially if given in conjunction with the bile salts. Deficiency of glycocholic acid predisposes to the precipitation of cholesterin, as does also a thickening of the secretion. These two above named remedies act by preventing this precipitation—they increase the flow of bile, they thin the secretion, and prevent stasis.

Sodium succinate is the third remedy to be briefly mentioned in this article, and possibly fully as important as any of the others, but its action can only be judged by its results. It does prevent the paroxysms, it may liquefy the bile and seems to subdue the catarrhal affection of the biliary passages, quelling the infective cholangitis and cholecystitis.

Pain and obstruction result from inflammation, appear before gallstones are formed, and occasionally after their removal by surgical means. A large proportion of gallstones give rise to no recognizable symptoms. When the irritation is so great as to produce spasm of the gallbladder and ducts, an attack of hepatic colic ensues.

In the treatment of the attack, a hot tub bath with colonic irrigations, glonoin $\frac{1}{100}$ grn. on tongue, followed by a hypodermic of atropine sulphate $\frac{1}{100}$ grn., will usually give very pronounced relief. Glonoin is a very quickly-acting antispasmodic, but evanescent, and the atropine enhances and prolongs its relaxant action. Hyoscyamine has a similar action to atropine and may be given after the first hypodermic of atropine. Strychnine arsenate in small dose is necessary to restore central nerve-control. This is the great antispasmodic triad. Give one granule of each every fifteen minutes in hot water until relief or until the physiological action of hyoscyamine is manifest.

If the pain still continues severe, a hypodermic of morphine-hyoscine may be given.

This is the treatment during the attack. When the attack is relieved, prescribe boldine ⅓ grn., chionanthin ⅓ grn., bile salts or bilein ⅛ grn. and sodium succinate 5 grn, four times daily with free drinking of water for six months or one year.

In favorable cases, the symptoms improve, local distress becomes less, attacks of pain are less frequent, and less severe and finally cease and the patient gives every indication of a cure.

[Contributed to MERCK'S ARCHIVES]

BRACHIAL NEURITIS

By Beverley Robinson, M. D., of New York

A MORE disabling and painful affection than brachial neuritis, one does not often meet with in practice. At times, the dividing line between what may be an attack of neuralgia and a fixed inflammatory condition of the nerve is difficult to decide. Again, at its inception, acute rheumatism of the shoulder joint on the same side may appear probable. But, when the pain continues, now dull, now sharp, lancinating, and there is also marked sensitiveness, on slight local pressure, for some distance along the course of the nerve, with inability to make certain movements of the arm, and numb or tingling feelings in the hand or fingers are present, there can be little doubt as to the nature of the affection.

While the cause of the attack in gout, or rheumatism, or in some accidental occurrence is often clearly made out, this statement is not always correct, and we may be much at a loss as to what it is. Further, we may not know whether the dietary should be curtailed or corrected, or whether the patient is over-fed, or indeed, too abstemious. In the one case, meat, sweets, alcohol, tea, coffee, or tobacco, should be allowed very moderately. In the other case, building up the general health with more abundant and richer food, is essential. The cry of the nerves, as has been affirmed, is for better and richer blood. Notably, to effect this, one should partake generously, of assimilable fats in the form of good butter, rich cream, or good olive oil. Besides, one may need as tonics, iron, arsenic, quinine, strychnine, or the glycerophosphates of lime and soda, to supply a loss to the nervous structure. Of course, local treatment, either palliative, or curative, is very important, and to lessen pain it may be, and without recurring to the use of harmful anodynes internally.

One's experience, however, in a given case, is not infrequently more interesting and instructive than general statements, and for this reason I shall now refer to a recent experience with a case of brachial neuritis, which affected specially the circumflex and musculo-spiral nerves of the left arm. In this instance, no efficient or accidental cause could be discovered. The patient, a man, had passed beyond middle life, but was in good health. His habits were moderate. He smoked rarely, drank very little of any alcoholic drink, and then only at meals, except for a pint bottle of beer of an evening, which had been his habit during two years previously, and seemingly agreed with him perfectly. When the pain first affected his arm considerably, as it did one morning on awaking, he applied a belladonna plaster. After this proved of no value, he pulled it off and made several applications of tincture of iodine, locally. Again, this did not relieve the pain. The same was true of repeated rubbing with soap liniment and spirit of turpentine, equal parts. Then resort was had to prolonged applications of an electrical pad, over the seat of pain, attached to the socket of an ordinary electric light, during the day. At bed-time, before retiring, he rubbed the affected arm and shoulder, at first very gently and warily, with an ointment composed of menthol, methyl salicylate and lanolin—and repeated the rubbing after the morning bath, which the patient took very hot. He then dried and rubbed himself, as well as he was able, with a coarse, Turkish towel. Prior to the bath, he made use of light wood dumb-bells and went through different movements. He then used for several minutes, the so-called masseur exerciser, which is essentially a series of wood-balls about the size of a silver dollar, strung in three rows along a rubber covered cord, to which they are attacked in numbers of three, by a small iron wire, which passes through their centers. The movements with dumb-bells, and masseur exerciser, were difficult and painful, especially at first, and for certain movements, particularly that of elevating the affected arm. They were persisted in, however, for a short time, each morning, because it is believed that prolonged inaction is bad and leads to rapid stiffening of the shoulder and arm muscles, which may also extend to, and harmfully limit, the movements of the shoulder joint itself.

As to internal treatment: the patient first took fluidextract of coca, in 50 to 60 drop doses, before meals. Subsequently, ½ grain tablets of caffein and 2 to 4 granules of cactoid, were given between meals.

The latter were abandoned very soon because they were not appreciably useful, and quinine, sulphate, 2 grn. was taken every three or four hours.

Finally, after several weeks, the patient recovered. Sleeping between blankets, and the advent of warm spring weather, were seemingly helpful. Whether the patient would have recovered sooner, with one or more fly blisters, or the repeated application of the actual cautery, I do not know. What I do know is, in another, but more severe case, in a man somewhat younger and more robust, they did not succeed. In this instance, treatment at a foreign Spa was also without remedial value. Osteopathy ultimately seemed to cure.

In the case I have reported, my doing was simple, not additionally painful, and required no outside assistance. The patient himself performed the treatment.

In brachial neuritis, the personal equation is notably important, and should be carefully considered. Cure follows different methods of treatment, but the less troublesome one is not infrequently the surest.

I am familiar with the reported successful treatment of brachial neuritis, by means of the high frequency current, and no doubt, would have had recourse to it, if my own treatment had failed me. In this connection, I am glad to refer to an instructive article by Dr. Joseph F. Harris, N. Y. Med. Jour., May 9, 1914.

OBSERVATION ON MALARIAL FEVER*

By L. Sexton, B.S., M.D., of New Orleans, La.

The rational treatment of malaria of the tertian type resolves itself into ridding the red blood cells of the asexual *Plasmodium malariæ* injected into the blood stream by an infected anopheles mosquito.

No treatment of malaria is worth while that does not take into consideration the eradication of plasmodium in the blood, or protection of the patient against the anopheles mosquito.

Whenever a fever case is visited in a malarial section several blood smears should be taken during the first visit before the administration of quinine, so that with the clinical symptoms a positive diagnosis may be made at once. This is particularly true during times of typhoid and suspected yellow fever, as there is no differential diagnosis harder to make without the microscope than between the malignant forms of malarial, yellow, and typhoid fever. Many practitioners in the South very properly carry their microscopes along to the bedside to examine such blood before any treatment is begun.

In tropical countries an examination of the blood for malarial parasites should be made of all subjects suffering from coma, uremia, and dysentery, as the cause of the trouble found early, if malarial, may be the means of saving a life by prompt treatment at the proper time.

The crescent parasites of the pernicious form of malaria are hardly recognizable except by an expert microscopist, after staining, as the evidence is often only small specks of protoplasm with little or no pigment. When these sporulating plasmodia segment they liberate a toxin which is the cause of the nervous explosion or chill, the severity of which depends upon the amount of toxin set free in the blood at the time of sporulation.

The remittent type of malaria is due to the estivoautumnal form of parasite. The paroxysms are much longer in duration, running into each other so there is no cessation from fever. Such types may be mistaken for typhoid or yellow fever unless the discovery of the plasmodium in the blood or Widal should clear up the diagnosis.

Prevention.—Not within our generation need we expect the eradication of malaria, and this on account of the lack of education and the carelessness of the average physician and parasite carrier. It can be, and has been modified in many communities by the building of residences on the highest part of the farm or town and screening them. Residences should be removed from nearby pools of water and swamps; then by draining and oiling of ponds, or stocking the ponds with numerous fish; by using the essential oils and mosquito lotion on all exposed portions of the body, particularly after night, when the anopheles are most active, many outbreaks of malaria might be prevented. Exposure at night should be avoided, sleeping under a close mesh bar, taking three to five grains of quinine three times a day on alternate days, during the summer and fall months in malarial sections will reduce the infection to one-half or less of the present prevalence.

The night moving picture shows, the night court session, or any gatherings of rural people from malarial sections are among the most common sources of malarial infections.

Mosquitos prefer as a breeding place the small stagnant pool, tin cup filled with water, or borders of the river or lake fringed with weeds and grass to protect them. All these sources of breeding should

*Read before the Tangipahoa Med. Soc. of La. Med. Record, Aug. 22, 1914.

be oiled in addition to screening and fumigating the infected house and screening the patient.

Drainage and sewerage, lowering the water level, the abolition of cisterns in New Orleans has so reduced the malaria in that city, that years may pass without a busy doctor having a case other than one brought into the city or hospitals from the surrounding country.

Immunity to malaria seems to exist among natives and some of the children of the dark races who have been raised in malarial districts; many of these persons carry parasites in their blood, without having chills. Their immunity, acquired or inherited, exists against the toxins alone, not against the parasite. A probable explanation of this immunity is that on account of the peculiar odor of many of the black races mosquitos will not molest them. It is a known fact that the same odor will cause wasps to leave, and permit their nests to be robbed, as is a common practice among some of the dark races in the tropics where the young wasps are used for fish bait.

As said before, three to five grains of quinine on alternate days with meals, during the summer and fall months is usually sufficient to prevent malaria, and in such small doses can hardly do any harm to those even with an aversion to the drug.

Quinine is germicidal to protozoa by first stimulating and then paralyzing them; from five to fifteen grains daily according to the severity of the case is quite sufficient. Ten grains, night and morning on the seventh, fourteenth and twenty-first days succeeding the last chill prevents relapses. One grain daily for each year of the child's age is a very proper dosage for children.

Quinine hydrochloride is quickly absorbed, appears in the urine within fifteen minutes after it is taken into an acid stomach. Its greatest concentration in the blood is within three hours after its administration, hence, ten grains should be given from three to four hours before the expected chill in the adult so as to meet and destroy the young parasites when they are least resistent to its action.

Euquinine is the tasteless carbonized acid of quinine and may be given to children in chocolate, sugar, or milk, and is so insoluble in the mouth that it is almost tasteless in the above mixtures. Its action and the doses are the same as those of sulphate and hydrochloride, only more time is required for its action on account of its insolubility. Warburg's tincture is a compound of quinine, rhubarb, aloes, gentian, camphor, and essential oils, but its chief ingredient is quinine, and its better effect is due (to the stomach that can retain it) to the quinine being in solution and perhaps more readily taken into the circulation on account of the volatile oils stimulating its absorption. Half-ounce doses repeated in three hours usually produce profuse perspiration. It is more applicable to the remittent than to the tertian forms. It can be retained only by the strongest stomachs aided by giving crushed ice and applying ice to throat and mustard to the stomach.

When in children, or because of gastric irritation in grown-ups, quinine cannot be retained by mouth, a cleansing enema is given, followed by double the mouth dose of quinine in warm solution held in the rectum by compressing the anus for an hour, or until absorption has taken place. Suppositories of quinine made with cocoa butter are also recommended when it is impossible to retain the drug by the stomach. A preliminary cathartic of some agreeable form should always precede the giving of quinine in malarial cases. The reason many cases hang on for a season, become chronic, and cause doctors to proclaim that quinine is not a specific, is the constant reinfection of these patients by working in the same swamps, environments, and fields infested by these infected mosquitos. The proof of this assertion is the fact that members of the family similarly affected who go away to the mountains, or out of the infected territory remain well after taking quinine on the seventh, fourteenth and twenty-first day after the last chill; while those who remain in the infected territory become reinfected unless kept screened and under the influence of quinine all the time.

In quinine we have a specific drug to destroy these plasmodia. In red blood cells fairly filled with these plasmodia we find the plasmodia destroyed or absent, with clinical symptoms gone after three days' administration of twenty to thirty grains of sulphate of quinine, provided the drug has been absorbed and given at the proper time. These are facts known and demonstrated wherever malaria is known to exist. There are several theories as to how the quinine accomplishes this result, viz.: (1) that it produces an edema of the sick red cells, destroying the plasmodium in situ, or (2) increases phagocytosis, raising the opsonic index, or (3) sterilizes the blood so that plasmodia cannot multiply, or (4) directly paralyzing the organism in the blood. We are not particularly concerned as to which of these theories is correct; the main point with us is to know just how to

cinchonize the patient the quickest way, thereby eradicating these poisonous germs from the blood of the patient entrusted to our care.

Anemia of malarial and tropical countries is almost universal. Pale people is the rule and not the exception; chronic diseases, hookworm, climate, and food play their part, but the destruction of the red cell by the malarial plasmodium is the principal cause of so much anemia in our Southern country. The cells may run down to two million per Cc., leaving the patient weak and dyspeptic and with all the symptoms attendant upon impoverished blood. Such patient should be kept in bed so long as fever continues and cinchonization should be accomplished as soon as possible to destroy the ameboid parasites. Iron and arsenic, bitter tonics with the most nourishing and digestible diet, bathing, elimination by kidney, bowels, and skin are essential. The patient should be kept in bed, fed on the most digestible food and removed from malarial climate as soon as possible. The ability of arsenic (iron, red bone marrow, and other tonics) to help build up these red cells destroyed by the plasmodium, has caused arsenic to be ranked next to quinine in its curative properties for malaria; but it is the tonic and not the antimalarial property of the arsenic that accomplishes the good result. Any treatment that would built up red cells as promptly would answer just as well. Fowler's solution pushed to its physiological tolerance, arsenous acid 1/60 grain doses, sodium cacodylate, two to three grain doses; even salvarsan introduced into the blood stream does not destroy the plasmodium, but they do help materially in blood reconstruction.

It is related of the workers in a mine in Mexico, where the laborers come from the malarial coast country, that though they suffer from arsenical poisoning after working in the mine for some time, they continue to have the chills and arsenical poisoning at the same time, unless quinine is given the chills continue. So in the treatment of acute malaria no time should be wasted giving arsenic when cinchonization is what is imperatively needed. As a matter of course, arsenic has its place in the after-treatment as a nerve and blood tonic to follow up the eradication of the plasmodia by quinine.

When quinine capsules are given by the mouth they should first be punctured with a needle and followed by some acid drink to insure immediate absorption. Hard compressed pills and tablets may pass through the stomach without absorption and thus cause a failure of cure to be credited to quinine.

There is no occasion in any case to give 100 grains of quinine daily, as it is neither absorbed nor required, and may be toxic in over thirty grain doses during twenty-four hours. Fifteen grains of quinine makes a 1/5000 solution in the blood of the average patient. Twice this amount is quite sufficient to destroy all the plasmodia (not crescents) if given three days in succession. The quinine acts better when given in two or three, seven to ten grain doses, preceding the expected chill time by three or four hours, so as to have the maximum saturation of the blood to meet the newly-developed plasmodia as they occur in the blood at their most susceptible age to the action of the quinine.

Contraindications to Quinine.—Persons with defective hearing, middle-ear disease, and those who are very susceptible and nervous should be given the smallest amount of quinine capable of destroying the germ. Many people have an aversion to quinine and its effect, in others it produces urticaria or disagreeable tinnitus aurium, while others seem much depressed by its use. Such patients should take the quinine in smaller doses or in combination with sodium bromide or phenacetin, or some other control; but of the evils, quinine effects or malaria, the latter is much more potent for evil to any patient suffering with the disease.

No one should be graduated or licensed to practice who is not thoroughly familiar with the means of cure and eradication of malaria. Boards of health not working on the malarial problem should be superseded by men who know and will combat our greatest enemy. State and National legislatures should be importuned to support liberally all means for the eradication and cure of malaria. Where hookworm or yellow fever has infected one, malaria has infected its thousand.

Our philanthropists can do no better than to help in the eradication of the anopheles mosquito and the drainage and redemption of the lowlands that harbor this parasite. Every drainage canal and reclamation conference is a tack in the coffin of the great malarial scourge of many portions of the United States, for it must be remembered that nearly all inhabitants of our country are liable to the infection of the anopheles mosquito. So it is not local but national in its sphere, and is an important enough subject to command the attention of our greatest national leaders in every State of the Union.

From an economical standpoint, the

eradication and control of malaria is the most important subject that physicians, boards of health, and drainage engineers have to deal with, for no malarial country can be considered healthy.

124 Barrone Street.

THE TREATMENT OF PERTUSSIS*

By Edwin E. Graham, M.D., of Philadelphia, Pa.

The treatment of pertussis is one which has always absorbed a large degree of medical attention, and the mere enumeration of all the drugs, inhalations, and cures, which have from time to time been brought forward, would consume far more time than you have kindly allotted to me. I will not, therefore, attempt to mention all the drugs and plans of treatment that might properly be considered in a historical sketch of this common and much-to-be-dreaded disease, but will draw particular attention only to a few of the drugs and methods of treatment that have in my judgment stood the test of long experience, as fresh air, careful attention to feeding and digestion, local applications to the nasopharynx, inhalations, belladonna, antipyrin, bromides, codeine, trional, heroin and chloral. Among the newer methods of treatment to which I wish to call your attention are: quinine given intravenously and intramuscularly, adrenalin, suggestion, and vaccine treatment.

As pertussis is contagious from the very beginning of the catarrhal stage until the end of the spasmodic stage—a period of about ten weeks—it is important that all children free from the disease be kept separated from any individual who has it, and in order for quarantine to be effective all unexposed children should, if possible, be sent away from the house during the entire period of contagion. This applies particularly to infants, in whom pertussis is associated with considerable danger; and all children who are not robust or who have a tendency to tuberculosis should be especially protected. A child with pertussis should not be allowed to attend school, and quarantine should be continued until the end of the spasmodic stage.

All children with pertussis should be given an abundance of fresh air and should be kept in bed if their temperature is 100° F. or higher. If the patient is sufficiently ill to be in bed the windows should be open day and night; if not in bed the child should spend as much time as possible out of doors. However, as excitement and violent exercise increase the tendency to attacks, an effort should be made to keep the child interested and amused with the minimum amount of exertion on his part. An acute laryngitis or rhinitis is, however, not benefited by cold air; for such cases the air in the sick-room must be kept fresh but not cold. Cold, fresh air is of benefit in all other pertussis cases. A change of air, especially to the seashore, is often of benefit, and a change from a raw, damp climate to a warmer and milder one is often followed by improvement.

If the child has been confined to bed any considerable time it is of advantage to remove him to another room and thoroughly house-clean the room before returning him to it. Wards where pertussis patients are treated should, if possible, be cleared of all patients and house-cleaned and fumigated before the patients return to them. Many cases of whooping-cough in a hospital ward suffer with mixed infections, and at least a temporary benefit will follow their removal to a recently cleaned and fumigated ward.

All children with pertussis should be fed in small quantities and often, and the younger the child the more necessary it is to preserve its strength by proper attention to its food and digestion. If a child vomits soon after receiving nourishment, it should be given another feeding to replace the one vomited. Gastrointestinal disorders in the young child suffering with pertussis often constitute a dangerous complication, and should receive early and careful dietetic and medicinal treatment.

Local applications to the nasopharynx, if made early in the disease—during the first two weeks—may be of decided value. They are of assistance only when the infection is localized in the upper air passages, as in rhinitis and pharyngitis. At this period an application of 2 per cent. silver nitrate solution to the nasopharynx may, by producing death of the superficial mucous membrane, and, possibly, destroying some of the specific pertussis bacilli, tend to prevent the spread of the infection to the deeper respiratory passages.

Ochsenius, of Chemnitz[1] has recently reported 107 children treated by this method, with improvement in eighty-four of them. He makes the application every second day, and claims that eight days after the beginning of the treatment the number of paroxysms is slightly diminished and the severity of the attacks decidedly lessened, and by the third or fourth week the improvement is marked. He lays special stress on the importance of using the silver nitrate solution early in the disease, when the infection is limited to the upper respira-

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tory track. Phenol (1 per cent.) has also been used successfully as a local application. It should be used early and may be repeated every second day.

Various drugs have been used by inhalation. Among those generally employed may be mentioned creosote and carbolic acid. They may be used in the ordinary inhaler covering the nose and mouth, or the vapor may be employed in the room of the patient. They act as a sedative to the inflamed mucous membranes and at least in some degree as a local antiseptic. As children are especially susceptible to carbolic acid poisoning, the urine must be closely watched. Chloroform may also be given cautiously by the physician when the paroxysms are especially severe and frequent. When the spasm of the glottis is unusually severe, intubation may be done and often gives relief.

The medicinal treatment of pertussis may, for convenience, be divided into two parts: First, drugs or other methods that *per se* have a tendency to lessen the number and severity of the paroxysms. Second, drugs or other methods that are directed to the treatment of the complications of pertussis. To the first an unusual amount of attention has been given; to the second, comparatively little. Among the drugs that *per se* are useful in pertussis must first be mentioned belladonna. Personally, I prefer using the tincture, beginning with one drop, three times a day, and increasing the daily quantity by one or two drops until mild physiological effects of the drug appear, when the increasing of the dose must be cautiously continued.

Antipyrin is a useful drug, but I have never used it in the frequent doses so often advised. A single dose at bedtime, or a morning and evening dose has been, in my experience, as much as it was wise to employ. To a child of two years I would give 2 or 3 grains each night, or morning and night.

Sodium bromide, grains v, three or four times a day, to a child of three years, is often of benefit, and codeine, trional, heroin, and chloral are often of benefit in allaying cough and inducing sleep. They may be given in a single dose at bedtime, or, if necessary, two or three times a day. A combination of quinine, two parts, veronal, one part, has been used successfully by Professor Winternitz, of Vienna. He claims distinct improvement in twenty-six out of thirty children in whom he used the combined drugs, but believes that it only acts as long as given and is not a cure. During its administration the paroxysms became milder and occurred less frequently; there was less vomiting and the appetite improved. Frankel and Hauptmann[2] also advise this combination of veronal and quinine. The dose ordinarily employed for a child of two years was veronal, ½ grain; quinine, 1 grain, repeated three to four times a day, according to the effect produced. They do not advise its use in children under six months of age. Soolman and Hatcher[3] report favorable results from a combination of quinine, grains i-ii, and bromide, grains i-ii, repeated three or four times a day for a child two years of age.

Quinine has been used in large doses and when so given may reduce not only the number, but also the severity, of the paroxysms. It is not an antispasmodic, and if it produces any effect in these large doses, it must be due to some effect on the causal bacillus. Lenzmann[4] has reported some interesting results from the giving of quinine intravenously and hypodermically. He secured very prompt and positive results from doses of 5 grains injected intravenously every second day. He claims that all paroxysms rapidly disappear and that the treatment acts like a charm. Quinine lactate, 10 Gm.; saline solution, 100 Gm., of which 2½ Cc., warm, is injected intravenously, may be similarly used. If given hypodermically into the muscles the effect is favorable, but not as prompt nor as satisfactory as when given intravenously.

Hydroquinine has been employed both intravenously and intramuscularly, but its action is more favorable when injected into the vein. It has been put up in ampules, the dose being in proportion to the age of the child. A daily dose is given for five or six days, then a dose every second day, and it is claimed that a marked improvement is noted after the first week of treatment. No disagreeable local or constitutional symptoms followed either the intravenous or muscular injections, and as so much is claimed for this treatment it is worthy of more extended trials. Hydroquinine has been used both intravenously and intramuscularly as a prophylactic with satisfactory results.

Adrenalin is strongly advised in the treatment of pertussis by Fletcher,[5] and since the publication of his article others have reported favorable results following its use. Wm. J. Lord,[6] where all other means failed, in a very delicate child, gave, by the mouth, 3 ♏ of a 1:1,000 adrenalin solution every four hours. The dose was soon reduced to three times a day, and the child rapidly improved; not only the number of the paroxysms became less, but

their severity decidedly diminished. Carta Mulas[7] had also read Fletcher's article and used adrenalin in a small epidemic of pertussis. He treated 15 cases, giving two to three drops of 1:1,000 adrenalin solution every two to three hours. The cough and vomiting rapidly diminished, no complications or bad effects followed the treatment, and in two or three weeks the patients were entirely well. He claims that the rapid cure of these cases prevented the spread of pertussis, as only 5 per cent. of the infants contracted it. In his opinion, adrenalin exerts a specific action on the causal agent of pertussis.

Every close student of pertussis must be impressed with the psychic element that so often enters into the disease, especially in neurotic children. If, as so often happens, the mother and those who are brought in contact with the nervous child are also neurotic, all the conditions are favorable for the development in this nervous child with pertussis, of marked psychic phenomena. Given a neurotic child where the psychic element is present, it is quite possible for suggestion to be advantageously used as an aid to the treatment. Oberholtzer,[8] in discussing the psychic element in pertussis, narrates the case of a boy seven years of age whose nurse, believing the paroxysms were largely induced by the desire of the boy to be carried in her arms, refused to carry him any more. His paroxysms ceased and he made a prompt recovery. His little sister of twenty months always began to cough as soon as the boy had a paroxysm. The nurse reproved her and the paroxysms of cough ceased. One day a trip on the lake was planned and after the nurse told the boy, when a paroxysm threatened, that they would have to return home, the cough disappeared for four hours.

Hamburger[9] also calls attention to this psychic element, and reports the case of a girl three and one-half years old cured by suggestion. The child suffered with pertussis for five weeks and was cured in two days by the faradic current. Hamburger infers that in this case the paroxysms were a pure neurosis after five weeks—what he calls a "half voluntary reflex."

The time allotted to me does not permit of my discussing the treatment of the complications of pertussis, but several cases that I have seen this winter deserve at least passing mention. A boy thirteen months old, with a tuberculous family history and himself tuberculous, passed successfully through a severe case of pertussis complicated with bronchopneumonia. In the stage of decline he became more and more drowsy and a clear fluid was removed by lumbar puncture in which the tubercle bacillus could not be found, and a guinea pig injected with 3 Cc. of this fluid failed to develop tuberculosis. There had never been any discharge from either ear, but Dr. MacCuen Smith obtained a drop or two of fluid by swabbing the ear with cotton. Pus was obtained from both ears by puncturing the drums; the day following, a double mastoid operation disclosed a well advanced double mastoiditis with secondary otitic meningitis. The temperature had been normal for ten days before the operation. We all, of course, appreciate how latent a mastoiditis may be in a child, but with no local evidence of mastoid disease, no ear discharge and no fever, the condition is easily overlooked.

Another case of interest was the seven-year-old son of Dr. C., of Philadelphia, who during an attack of pertussis had an unusually severe paroxysm on February 15th. The next morning he had fever and vomiting. Vision continued to decline until March 13th, when vision is found to be: left, 11/200; right, 20/100. The discs are pale; retinal arteries reduced in size; field of view is concentrically contracted. Previous high grade double optic neuritis (choked disc). At present, total secondary atrophy. Disseminated choroiditis, both eyes. Divergence. Vision reduced to light perception. Pupils moderate in size and no reaction. Under ethyl-chloride narcosis, pupils contract *ad maximum*. Diagnosis: hemorrhage into the sheath of nerve at the optic chiasm. These two cases illustrate the necessity of a correct diagnosis of complications in order to properly carry out appropriate treatment.

I am quite sure that you all expect me to say something about the vaccine treatment of pertussis. I was the first to try this method of treatment and have carefully read the reports of all cases treated by this method since the publication of my paper in January, 1912. A large number of articles have appeared upon vaccine treatment, and from the close study of my own series, as well as many cases seen in consultation where the vaccine treatment has been used, since the publication of my paper, has convinced me that it is a distinct addition to our treatment, and is also of more or less use as a prophylactic. In a case of moderate severity in either an infant or an older child, when the number of the paroxysms is small and of a mild character, the vaccine treatment is not necessary, but it is often of distinct benefit, in the severe cases, in children of all ages, and its influence as a prophylactic, especially where infants have been exposed, or where a frail

or possibly tuberculous child has been infected with the pertussis bacillus, should be carefully worked out, and its prophylactic power tested by its use, in a large number of cases. The papers on vaccine treatment by American and foreign authors are too many to quote at length, but a few will be mentioned.

E. M. Sill[10] reports thirty-three cases treated with vaccine. In all the number and severity of the attacks were markedly diminished. He advises 50,000,000 every second day in moderately severe cases and 100,000,000 in very severe cases. He reports thirteen additional cases and three prophylactic cases which were exposed and proved to be immune. All sixteen cases were treated with pertussis vaccine, 50,000,000; staphylococcus aureus, 20,000,000; micrococcus catarrhalis, 20,000,000. With best drug treatment the cough persisted from seven to twelve weeks; with pertussis vaccine from four to four and a half weeks, and with combined vaccine from three to three and one-half weeks. Of the last ten treated with combined vaccine, all were cured in three and a half weeks.

There seems to be a growing tendency to treat pertussis with a mixed vaccine. Sill cites Dr. Freeman, of London, who treated 1,140 cases with vaccine with the following results: Much better, vaccine, 31 per cent.; control saline, 21 per cent. Better, 37.1 per cent.; control saline, 34.5 per cent. Unchanged, 15 per cent.; control saline, 23.9 per cent. Worse, 15.2 per cent.; control saline, 18.15 per cent. Much worse, 1 per cent.; control saline, 1.85 per cent.

Sill believes that no bad effects follow the vaccine treatment; that the average length of the cough under this treatment is about four and one-half weeks. He suggests giving the vaccine treatment every day for a few days in very severe cases and he is guided more by the severity of the disease than the age of the child. The cases seen earlier in the disease before the height of the paroxysms is reached, respond most quickly to treatment. The younger child receives relatively larger doses, and responds more quickly to treatment. He considers this important because of the grave danger of pneumonia developing in the young child. He also believes that vaccine may confer immunity.

Chas. Nicolle and A. Conor[11] used living cultures of the Bordet bacillus, injected under the skin, repeated every two or three days. The treatment was given to 122 children, but eighteen were not seen after the first injection. Of the 104 that were treated, thirty-seven were cured, forty improved, and twenty-seven remained stationary. In the cases cured the improvement was manifest early. The improvement was noticed after the first or second injection, the number and severity of the paroxysms being diminished.

Lagane[12] claims that the endotoxin of Bordet bacillus is irritant, and even necrotic, to the mucous membrane and may cause a necrosis. The immunity lasts long and, therefore, the best results from vaccine ought to be in prophylaxis.

Professor Manicatide[13] finds the Z bacillus in all stages of the disease. He made a vaccine with this Z bacillus and treated 300 children with very good success. As a prophylactic he vaccinated fifteen cases, none of whom contracted the disease; of fifteen controls, all contracted it.

Yakowleff[14] has employed vaccination for small-pox in cases of pertussis.

Many other papers, almost all of them favorable to the treatment, might be mentioned. In view of all this evidence, most of it favorable, it seems to me advisable to use the combined vaccines in the treatment of severe cases of pertussis. The final verdict as to its efficiency can only be decided by additional evidence.

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Chronic Laryngitis:

The following oily mixture has been recommended for inhalation without the aid of heat.

Camphoræ	3j
Olei Picis Liq	3ij
Iodi	grn. xx
Creosoti	3j
Mentholis	grn. xxx
Olei Sesami	3iv

MYASTHENIA GRAVIS PSEUDOPARALYTICA*

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This disease was first known as bulbar paralysis without anatomical findings. Other synonyms are myasthenia gravis pseudoparalytica, asthenic bulbar palsy, asthenic paralysis.

It is a general disease, affecting more conspicuously the muscles supplied by the cranial nerves, but involving all the muscles, even the unstriped, and, therefore, the term (suggested by Jolly) myasthenia gravis pseudoparalytica is perhaps the best name.

The first few cases were described by Wilkes, Erb and Oppenheim. In 1892, the writer, at Oppenheim's instigation, published the pathology of a case, collected all the reported cases, and tried to establish a symptom-complex. This was later on amplified by the researches of Goldflam, and in the course of the last twenty years numerous cases have been carefully examined, and the disease clinically at least, is well known and easily recognized. It is mainly due to Oppenheim that the disease has been established as a clinical entity.

Etiology.—McCarthy was able to tabulate 180 cases taken from the literature, and found that females were somewhat oftener affected than males; also that it occurs most frequently in adult life, from the age of twenty to fifty; that it occurs quite frequently between the ages of ten to twenty, but is rare before ten and after fifty.

Infection as a preceding factor, especially influenza, was noted in about 25 per cent. of cases. Menstruation, pregnancy and lactation seem to have a deleterious effect on the gravity of the symptoms. Inherited defects of the nervous system does not seem to play a rôle in the etiology. In speaking of the probability of a congenital defect in the muscular system, Oppenheim calls attention to the fact that he not only found a congenital malformation in the canal of Sylvius, but also malformation of the hands and feet. Others have found it combined with sexual infantilism.

Pathology.—The original observations that the nuclei of the medulla oblongata and the anterior horn cells are normal in this disease have been verified by all subsequent investigations.

The thymus has been found persistent in quite a number of cases. Weigert, who first called attention to the persistent thymus, also found an accumulation of cells between the muscle fibers in the muscles, and considered them metastases of thymus tissue. These cells are found in large numbers when present, and have been termed lymphemorrhages, and are looked upon as lymphoid structures. The muscle fibers may or may not be normal. Makeloff has recently shown that myasthenia affects the entire muscular system of the body, including the involuntary, the muscles of accommodation, the sphincter iridis, heart and bladder muscles can all be involved; when the infiltration is large, the muscle fibers may be atrophic, the muscle fibers are not infiltrated, the cells occur in loose reticulated tissue and, aside from the muscles, are also found in other organs. Their relation to persistent thymus gland is not well established since they are found when the thymus is normal. The thymus was found persistent or diseased in ten cases (McCarthy). In other cases malignant tumors and tumors of the mediastinum were found.

The opinion prevails that the presence of some toxin in the body is the exciting cause of this disease, acting upon muscle tissue congenitally defective. That this toxin must in the majority of cases be of endogenous origin is clear from the etiological fact that in most cases there is no history of infection. That this toxin is the result of a change in the balance of the neutral relation of the organs of internal secretion is not sufficiently proven, because positive evidence of persistent thymus was found in but ten of the 188 recorded cases. Chvostek and Marinesco bring forth the story of a hyperfunction of the parathyroids. Kaufman advances a theory of autointoxication due to a defective action of the liver. Buzzards' investigation of the electrical reactions seems to prove that the chief symptoms of the disease, viz., abnormal exhaustibility of the muscles, is due to a defective condition of the nerve end organs. Knobland tries to explain the congenital anomaly of the muscles as consisting of a pathological increase of the pale over the red striated muscle fibers; that the myasthenic reaction is nothing but the normal reaction of these pale striated muscle fibers, and that when the latter are more numerous than the red the entire muscular system partakes of their character and rapidly exhausts. He maintains that the exhaustion is the result of the action of some toxin which causes a progressive degenerative myositis, and that the lymphemorrhages are merely an expression of this myositis. Marburg and Borgherins are also of the opinion that the muscular

* Lancet-Clinic, Sept. 5, 1914.

changes found are indicative of a degenerative myositis.

That we are dealing with a combination of a congenitally defective neuro-muscular apparatus, acted upon by a toxin developed in the body, seems probable. Whether, however, this toxin is due to a defect of the biochemical mechanism of the body caused by the function of a persistent or diseased thymus, or other lymphatic tissue, remains to be proven. Neuner in his recent exhaustive monograph of the status thymicolymphaticus makes no mention of myasthenia as one of the clinical manifestations of this condition.

The researches of Pemnerton on biochemical changes in myasthenia show an abnormal excretion of calcium salts and a deficiency of excretion of kreatinin. He looks upon the disease as due to a defective metabolism of the muscle tissue and advises the use of the calcium salts in the treatment of the disease. All of the researches so far indicate that the pathological subtraction of the affections is a disease of the muscular system of the body.

Symptomatology.—The essential manifestations of the disease is the rapidity with which the muscles exhaust when used. On arising in the morning, at least in the beginning of the illness, the patients are apparently normal, toward evening many, if not all the muscles of the body are in a state of paresis. In the advanced cases after a few voluntary muscular contractions, the power evolved decreased rapidly until in a short time the muscle is entirely exhausted. After a short period of rest the muscular power returns again. The earliest manifestations are on part of the muscles supplied by the cranial nerves, and the cases resemble the symptom-complex of progressive labio-glosso-pharyngeal paralysis.

Bulbar Symptoms.—The first symptoms are usually on part of the external muscles of the eyes. On arising in the morning the lids are in a normal position; as the day advances the lids gradually droop, until at night the ptosis is well marked, or even complete. After a night's rest the ptosis again disappears, but later on in the disease ptosis is also present on arising. Goldflam called attention to the fact that the external eye muscles are also involved. This shows itself in the form of diplopia, and during the examination the muscles fatigue and the images become separated farther and farther, as the muscles become more and more fatigued. The images also show variation in position as the muscles become fatigued in turn. An irregular jerky movement of the eyeballs is seen as the eyes are moved frequently from side to side. The ptosis is at first compensated by action of the frontalis muscles, and when these become fatigued the head is thrown backward. The involvement of the facial muscles gradually gives rise to a loss of expression, the lip muscles quickly show fatigue when used in speech, so also the tongue and pharynx muscles. Mastication and swallowing are attended with marked subjective symptoms of fatigue, and eating becomes difficult and finally almost impossible on account of the rapidity with which the muscles become exhausted. Speech becomes difficult and is attended with great exhaustion. In a few words, we have ptosis of both eyelids, diplopia, dysarthia, dysphagia and paresis of the lip muscles, and weakness of mastication. Frequently the onset is characterized by a weakness of one, or even of all the external muscles of the eye in the form of an ophthalmoplegia. The reflex action of the pupils is usually found to be normal.

These symptoms are all less manifest in the morning than in the evening and may only be slight in the beginning of speech or at the onset of a meal and gradually progress until the speech becomes more and more indistinct and mumbling, and mastication and swallowing becomes so difficult that tube feeding must be resorted to.

The neck muscles become affected, and the head gradually sinks forward as the fatigue becomes more marked; the trunk muscles are involved. Dyspnea is a common symptom. In addition to the exhaustion dyspnea, sudden attacks of severe dyspnea, with tachycardia and elevation of temperature occur at times during the course of the disease. In one case, at least, Strumpel was able to relieve this condition by pulling the tongue forward, and attributed the attacks to paralysis of this organ. The muscles of the extremities show the same involvement, the use of the arms becomes progressively more difficult, walking is attended with great fatigue and the patient finally becomes bedfast, although all movements can be executed in a recumbent position. In a word, the cardinal rapidity of the onset of exhaustion after slight physiological use of the muscles. This condition is subject to remissions, disappearing quickly after rest, reappearing quickly on use; but in the progressive cases the paresis becomes to a greater or less degree permanent.

The second characteristic of the disease is that the signs of degenerative atrophy of the muscles are wanting, even to the end, in fatal cases. The muscles affected do not become atrophied, there is no fibrillary

twitching and no reactions of degeneration.

There are no sensory disturbances and no involvement of the rectum and bladder. There are no trophic changes. Palmer reports that out of 126 collected cases seven were associated with Basedow's disease. Oppenheim states that hysteria is at times a complication. Diller reports a case complicated with angioneurotic edema.

Myasthenia is at times associated with dystrophia musculorum, and in a few cases myotomia was present.

Myasthenic Reaction.—The affected muscles show a remarkable reaction to irritation with the faradic current. If a strong faradic current is applied to the nerve trunk or to the muscle itself, and the current is rapidly interrupted, the muscle responses are at first quick and strong, then slower and weaker, and finally no response can be obtained at all. If the muscle is rested then, for a period varying from a few seconds to a minute or two, strong responses can again be obtained, but the exhaustion takes place more quickly. After the muscle is completely exhausted, it can at once be used for voluntary movements, but this is not the rule. Buzzard has shown that a muscle exhausted by the faradic current responds at once to galvanic current. If the muscle is thrown into a tetanic contraction by the faradic current for one-fourth to one-half minute, the tetanic contraction disappears and finally dies out, even though the current is continued. The galvanic current does not show the same phenomenon.

The myasthenic electric reaction is not constant. It has been found absent in a number of cases. When present it varies with the degree of progress which the case has made. In the beginning cases total loss of response can not be obtained, and in the same case it is less marked during the period of remissions which are common in this affection.

Course—Duration—Prognosis.—When the first articles were published the disease was looked upon as progressive, with remissions and exacerbation, with an inevitably fatal termination. This view has changed. Its onset is gradual and chronically progressive, with acute or subacute exacerbations, followed by remissions, and may continue for as long as twenty years. It may begin with the eye muscles or in the extremities. The onset, however, is usually in those muscles covered by the glosso-labia-pharyngeal territory. The average duration in the fatal cases is from one and one-half to two years. Complete recoveries have been reported. Whether these were merely remissions of long duration can not be determined. The prognosis, however, is unfavorable, and nearly half of the reported cases were those which ended fatally. Death occurs as a result of exhaustion, or of septic pneumonia. At times sudden attacks of dyspnea terminate fatally. The condition is capable of much improvement. Even the most pronounced conditions in muscular weakness can disappear, and the patient presents an appearance of perfect recovery, and then the paresis can suddenly and acutely reappear and quickly lead to a fatal termination. The remissions may last for nine years (Oppenheim), and Goldflam first called attention to the possibility of a cure.

Diagnosis and Differential Diagnosis.—The clinical diagnosis must be based:

1. Upon the cardinal sign of abnormal exhaustibility of the muscles.
2. The absence of the signs of true atrophic muscular degeneration.
3. The presence of the myasthenic electric reaction.
4. In the early cases the absence of all signs of weakness in the morning, and their gradual development during the course of the day.

The first and most important disease to rule out is the labio-glosso-pharyngeal paralysis of nuclear origin. The early involvement of the eye muscles, the presence of ptosis, and the characteristic facial expression produced by the presence of ptosis, the wrinkled forehead, the slightly thrown-back head, and the expressionless lower half of the face, give us a picture opposed to that of bulbar palsy of nuclear origin, in which the upper half of the face is full of expressions, an absence of ptosis, while the lower half of the face is expressionless. In true bulbar palsy, the eye muscles are not affected at all, or perhaps very late; in myasthenia they are affected early. In true bulbar palsy we have evidences of true atrophy—thin lips, soft, spongy, wrinkled tongue. In myasthenia, the volume of the muscles is normal. In true bulbar palsy we find the fibrillary twitching, especially marked in the tongue; in myasthenia this twitching is not found. Reaction of degeneration, complete or partial, is present in real bulbar palsy, and absent in myasthenia. Moreover, in true bulbar palsy the extremities are not affected early, whereas the exhaustion of the neck, trunk and extremities occur early in myasthenia. In true bulbar palsy we have real paresis of a continuous, permanent type; in myasthenia we have a predominance of exhaustibility over the paresis. The myasthenic electric reaction, when present, is a valuable aid in the differential diagnosis.

It is, however, not fully developed in the early stage of the disease. Although this reaction has been reported to have been found in other diseases, it is found typically only in myasthenia, and the other affections in which it is occasionally found could not be confounded with bulbar palsy.

Pseudo-bulbar palsy is characterized by the history of sudden apoplectiform onset of the symptoms, with a more or less complete paresis or paralysis of the muscles, followed by an improvement in the function and use of these muscles. These attacks are repeated. The upper facial and eye muscles are usually not involved.

Polioencephalo-myelitis is usually an acute affection; in the rare cases where it is chronic and progressive we have real paresis with atrophy and reaction of degeneration and an absence of the typical myasthenic exhaustion and electric reaction. Jolly, Oppenheim and Gower have reported cases of myasthenia gravis which bear a resemblance to the fascio-scapulo-humeral type of progressive muscular dystrophy, but the absence of the muscular atrophy and the presence of the myasthenic electric reaction were sufficient to distinguish the two diseases.

In cases running an acute course, we may be reminded of the bulbar type of Landry's paralysis. The latter, however, is of much shorter duration, and is distinguished by the development of sudden and complete paralysis, and not of the myasthenic form of muscle exhaustion.

Treatment.—If we hold the theory that the disease is the result of a combination of a congenital malformation of the muscle structure, plus the action of a toxin, which produces a degenerative atrophic myositis, it is clear that the only hope of therapy lies in our ability to find the source of origin of the toxin. If, again, we hold the thymus or defective lymphatic system theory of the origin of the lymphorrhagic infiltration of the muscles as the cause of myasthenia gravis, we are confronted with an equally difficult problem in therapy. The indications for treatment with the toxic theory in view is offered by those cases which are combined with Basedow's disease and myxedema has led Palmer to suggest the trial of thyreoidin and ovarian extract.

The treatment of the cases with thymus extract does not seem logical, if we hold the theory that the persistence of the thymus gland and its secretions unbalance the effect of internal secretion on metabolism. The use of the X-ray for the purpose of destroying, if possible, any remnants of the thymus, seems more logical and worthy of a trial. On account of the frequency with which diseased or a persistent thymus has been found, careful use of the X-ray over the sternum should have a trial in all cases.

Chvostek's contention, based upon certain resemblances to tetany, and of the opposite conditions of the state of muscle irritability that myasthenia gravis is a symptom complex, caused by hyperfunction of the parathyroids, does not give us any therapeutic indication. The use of anesthetics is not contraindicated in these cases, if the theory is correct, that the disease is of muscular origin, and, therefore, surgical treatment of the parathyroids, either in the form of artery ligation of the branches going to the upper pair of parathyroids, or the removal of the latter could be attempted, although no cases have as yet been operated on with this theory as a basis.

Electric stimulation of the muscles is contraindicated; the muscles will only be more exhausted, the clinical indication being physiological rest.

The chief indication for treatment afforded by a study of the nature of the disease is rest for the muscles. The patient is to be put to bed, all muscular activity, even speaking, is to be prohibited, and exercise is to be replaced by gentle massage and passive stroking of the muscles, and by passive movements.

The next indication is feeding. If the exhaustion of the masseter muscles is so great as to prevent mastication, the food should all be chopped fine and given in a semi-solid or liquid form, and great care should be taken to swallow slowly. As in true bulbar palsy, the starchy foods are not well digested, because of insufficient mastication and mixture with saliva. The patient should keep starches in the mouth as long as possible, mix them with saliva and thus prevent fermentation. Oppenheim warns against the use of the stomach tube on account of the danger of sudden death during the struggle attending the introduction of the tube. Rectal feeding is necessary only when the patient cannot swallow.

In the advanced cases there should be periods of rest for the muscles of mastication and swallowing, during which these muscles are to be allowed to recuperate. Basing his experiments on the theory that the exciting cause of the symptoms of myasthenia is a toxin of exhaustion, Weichard suggested the use of an antitoxin; Oppenheim, who has made use of this antitoxin, reports that he was unable to obtain any satisfactory results. Kaufman recommends the use of spermin (Poehl), 1 Cc. of a 2 per cent. solution, hypodermically, daily or every second day.

The hypophysis extract has also been used, but since there are no reliable preparations in which the anterior and posterior lobes are treated separately its use can only be experimental. From a standpoint of drugs, the indication is to keep up a good digestion, and the first indication is to assist in the digestion of the starches. Any one of the diastases will be found to be useful, preferably the taka diastase.

Sodium citrate and sodium formate have been recommended as palliative remedies on account of their well-known properties of preventing fatigue and of increasing the working energy of muscles. They are given in doses of 1.0 Gm. each (grains xv., t.i.d.).

Tonics in the form of iron, quinine and strychnia and arsenic will assist in maintaining the general health.

Sudden attacks of dyspnea which threaten the life of the patient are to be combatted by prolonged artificial respiration, for after a period of rest the respiratory muscles may recover sufficiently to again be able to perform their functions.

BACILLUS COLI INFECTIONS IN INFANCY AND EARLY LIFE*

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It is my purpose to discuss briefly some of the diseases of infancy and childhood which are caused by the *Bacillus coli*.

1. First in consideration are infections of the brain. Although many text-books mention the *Bacillus coli* as an etiological factor in meningitis, yet there are few authentic cases reported. Smith, of London, has collected thirty-two cases, in only nine of which the colon bacillus was found in pure culture. Of these Holt reported two. To this list may be added one case which Dr. Nicoll has observed and one case which occurred in my service at the Nursery and Child's Hospital several years ago. Dr. Zinsser identified the organism obtained from the spinal fluid as a colon bacillus.

In these cases, which were mostly all young babies, the condition was secondary to inflammation of the intestinal tract, navel, or bladder, otitis media, or spina bifida. Smith concludes that it may be either serous or suppurative. The symptoms are the same as of other forms of meningitis; the prognosis is not invariably fatal.

2. In the respiratory tract the *Bacillus coli* is rarely the only cause of inflammatory processes. It has been found in pure culture in the sputum of patients suffering from pneumonia, according to a case reported by Meara and Niles. Pearson, in the British Medical Journal of 1909, reports a case of empyema following a pleurisy and bronchiectases in a boy of seven years. The *Bacillus coli* was found in pure culture in the discharge.

Schroter and Weinberger report several cases of bronchopneumonia caused by this organism.

At the Rockefeller Institute and at the Research Laboratory of the Board of Health there were no case records of pneumonia caused by the *Bacillus coli* alone.

3. In hemorrhagic septicemia of the new-born, or Winckel's disease, a generalized colon bacillus infection has been found. This disease is characterized by marked prostration, vomiting and diarrhea, cyanosis, intense general icterus. The urine, which is passed frequently, is small in amount, smoky in color, and contains hemoglobin. There is usually a fatal termination. In six cases reported by Wolcyznski the infection was supposed to have been conveyed by infected spring water used for cleansing the mouth.

4. Dr. Anna Williams has reported several cases of acute catarrhal conjunctivitis in which a colon bacillus was found in nearly pure culture.

5. In diseases of the intestinal tract it seems useless to try to discriminate between the *Bacillus coli* and the many associated organisms of the colon group. It has not been proved that the colon bacillus, *per se*, is responsible for the many forms of intestinal disturbances. With the possible exception of that condition known as the intestinal infantilism of Herter and of a brief period in the new-born, the *Bacillus coli* is always present in the intestinal tract. If the body resistance be lowered or if there be an abrasion of the mucous membrane, this organism may prove a source of great danger to the individual.

Nuttall and Thierfelder, from their experiments upon guinea-pigs removed by cesarean section and fed upon sterile food, concluded that intestinal bacteria were not essential to normal nutrition. On the other hand, Schotelius found that chickens fed upon sterile food were retarded in development and showed normal growth only when given food containing bacteria. Leven found that some animals in the Arctic region have no bacteria in the intestinal tract. Herter says that these experiments and findings are, indeed, interesting, but fail to apply to the human

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organism. He believes that the importance of this class of bacteria lies in their capacity for checking the development of organisms capable of doing harm.

It is not within the province of this paper to discuss the many allied organisms of this group which are held accountable for the severe forms of dysentery found in infants and young children. As Zinsser says: "Whereas, the *Bacillus coli* may aggravate morbid processes by the formation of gas, in an excessive carbohydrate diet, they do not of themselves take part in actual putrefactive processes. In most intestinal diseases they actually play but a secondary part."

6. Finally, there is a most interesting group of cases resulting from an infection of the urinary tract by the *Bacillus coli*.

In children this condition is most common during the first two years of life and the majority of cases are in girls. Thomson reports 79 per cent. in girls, Goffert 90 per cent., and Morse 60 per cent. This may be due to the anatomical fact that the short wide urethra of the female is only one-fifth as long as the male urethra and may easily become infected from soiled genitals.

The modes of infection are: (1) Descending by the blood through the kidneys; (2) ascending through the urethra; (3) transparietal, or by contiguity through some lesion of the intestinal mucous membrane. As Morse says: "The mode of infection is not always the same; in girls it may be ascending, in boys transparietal, while in both sexes occasionally it may be hematogenous."

Varieties.— Bacilluria.— Characterized by the presence of the *Bacillus coli* in a urine which is highly acid. There may be a lack of all constitutional symptoms. Sometimes there is enuresis and a marked anemia.

Pyelitis.—Involvement of the pelvis of the kidney, accompanied by marked constitutional symptoms, often associated with inflammations of the intestinal tract, large or small amounts of pus in an acid urine, high or low fever of the remittent type, protracted course.

Suppurative Pyelonephritis.—The most severe form of this infection, with multiple abscesses in the kidney, pus in the urine, more marked constitutional symptoms, chills and fever, recovery rare.

The mortality, exclusive of bacilluria, is about 10 per cent.

These conditions doubtless explain many cases of obscure high fever which formerly were associated with malaria or typhoid.

Treatment.—Mild cases recover with little or no medication. As a rule, however, the treatment must be continued a long time, as the condition has a tendency to recur. A diet suitable for increasing fluids should be given.

Potassium citrate may be given in increasing doses, 30 to 180 grains a day. Sodium phosphate is recommended as a laxative.

Hexamethylenamine, 6 to 60 grains a day, with sodium benzoate. For the liberation of formaldehyde the urine must be acid. For this purpose hydrochloric acid may also be used. The dosage must be very small at first, and the child watched carefully for any sign of kidney irritation, albumin or blood in the urine.

Concerning the utility of vaccines reports differ greatly. Thomson thinks that they may do good in acute but not in chronic cases. Morse believes that vaccines do not accomplish much. Freeman has found that vaccines in acute conditions affect the constitutional symptoms favorably, but do not inhibit the growth of bacteria. He has been as successful with commercial as with autogenous vaccines. Dosage 10 to 100 million at four or five-day intervals.

Case 1.—A. R., twenty months; female. Under observation seventy-one days. When seen with the attending physician the child had been ill for one week without marked constitutional symptoms. Temperature ranged from 101° in the morning to 104° in the afternoon. Physical examination negative. Urinary examination was advised, and the urine was found to contain a large amount of pus. Blood examination showed a leucocytosis, 20,800. The patient was given urotropin (hexamethylenamine) in increasing doses, starting with 1 grain, which medication was continued for over a month, the daily dose amounting to 30 grains. At this time there were only a few pus cells found in the urine. During the next thirty-two days this treatment was alternated with the A. B. C. mixture in daily doses of 33 grains, the temperature ranging from normal to 99° and 100° in the afternoons. At the end of this period there was an exacerbation of the attack, temperature ranging from 100° to 104° in the afternoons. The specimens of urine contained a large amount of pus and bacteria. Vaccines in doses of 10,000,000 daily were used upon two occasions. Their use was followed by increased temperature and marked constitutional symptoms, so that they were discontinued.

The temperature fell to normal at the end of a week, and continued normal for six days, when there was a second exacerbation, which, however, lasted for only six days, the highest evening temperature being 102°. The amount of pus in the urine was small. In the meantime the child had gained over a pound in weight. The mother was advised to discontinue taking the temperature and to send the child to the country.

Case 2.—J. H., six months; male. Under observation for over 100 days. Chief complaint upon admission was vomiting and diarrhea; duration eight days. Family history negative. Physical examination showed a poorly nourished child with marked signs of rachitis. There was

a slight stiffness of the neck and a tendency to opisthotonos. Two weeks after admission a condition of tetany developed which continued for over two months. There was no Kernig sign and lumbar puncture was negative. The urine was found to contain a large amount of pus and bacteria.

Soon after admission the child was given potassium citrate, 60 grains a day. This was continued for eight days, and as there was no diminution of the amount of pus and bacteria in the urine the patient was then given urotropin with sodium benzoate, 1 grain of each, 8 grains a day. This was continued for three days, the temperature during this period being subnormal. The urotropin was increased to 16 grains a day, and the next day was increased to 18 grains without any effect on the amount of pus or of bacteria. Three days later it was increased to 20 grains. As the pus in the urine had diminished somewhat, potassium citrate was again given, 15 grains p.d. This was discontinued after four days, and urotropin in 40-grain doses was given; increased to 80 grains a day during the following ten days. At this point the amount of pus diminished preceptibly and there was no bacteria in the urine. Four days later both the pus and the bacteria appeared in considerable amounts, and potassium citrate was again given in 80-grain doses. Six days later the urotropin was continued in 20-grain doses. This time there were no bacteria, and the urotropin was increased to 40-grain doses four days later. This was discontinued and potassium citrate was given. Three days later pus and bacteria again appeared in the urine. Potassium citrate was given in 40-grain doses. This was continued for four days. Ten days later, as there was a large amount of pus and bacteria, urotropin was given in 40-grain doses with dilute HCl. The amount of pus and bacteria diminished considerably, but unfortunately at this time the child developed a nasal diphtheria and was transferred to the Hospital for Contagious Diseases.

In conclusion the following observations should be emphasized:

1. In children the *Bacillus coli* may invade the nervous system, causing a meningitis indeterminable clinically from other forms.

2. It has been found in pure culture in diseases of the respiratory tract.

3. It may produce a septicemia, as is found in Winckle's disease and other reported conditions.

4. It has been found in acute catarrhal conjunctivitis in children.

5. It doubtless acts with other organisms of its group in diseases of the intestinal tract.

6. In the genitourinary tract the *Bacillus coli* may be the cause of enuresis, cystitis, pyelitis, and pyelonephritis, these conditions accounting for many of the previously unexplained high temperatures with severe constitutional symptoms.

7. As the course of a pyelitis is frequently protracted and as there are often exacerbations of symptoms after apparent cure, the treatment must be persistent and should be continued until the urinary findings are normal.

8. The most satisfactory treatment appears to be in the use of alkalies or in the guarded use of hexamethylenamine in increasing doses.

9. The vaccine treatment of pyelitis should be considered especially in obstinate cases and when other methods are not successful.

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THE THERAPEUTIC VALUE OF FISCHER'S SOLUTION*

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In this day and age when the doctrine of the "strenuous life" holds such complete sway, it is not surprising that the medical profession should be called upon more and more to come to the relief of those organs whose prominent function is the removal of waste products from the body; and this is true not only of the intestinal tract, but especially of the structures concerned with the elimination of the debris resulting from the metabolism of the nitrogenous or proteid elements. Thus the profession has come to recognize the long series of symptoms grouped generically under the term "autointoxication," as requiring a thorough and continued cleansing of the intestinal tract as the basis of treatment; similarly the importance of the rôle played by the skin as an organ of excretion has led to the devising of many means, both mechanical and medicinal, for increasing the activity of the sweat glands; but it has been only within a comparatively short time that it has been possible with any degree of certainty or safety to excite the excretory function of the kidney to greater activity.

Attempts have been made since the beginning of medical history to produce an increase in the excretion of urine by the use of medicinal agents, and the very number and variety of the diuretics found in the materia medica gives eloquent testimony to their inefficiency. Thus the treatment, especially in acute nephritis, has resolved itself into an effort to make the skin and the intestinal tract assume, as far as possible, the duties that are naturally performed by the kidneys.

During these years which have brought an increase in the demands on the excretory organs, the brunt of the battle has fallen on the kidneys, with the result that renal insufficiency in one form or another is becoming more and more frequent, and

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presents a complication always serious and frequently fatal to many a condition not in itself necessarily dangerous. Thus it naturally results that any therapeutic measure which aids the kidneys in resuming their normal function finds a field of usefulness in a large number of diseases which vary widely in their pathology, but which have in common this element of renal insufficiency.

Such an agent has been placed in the hands of the profession by Dr. Martin H. Fischer, of the University of Cincinnati, in the form of the solution which bears his name, and which consists of sodium carbonate (crystallized), 10 Gm., and sodium chloride, 14 Gm., dissolved in one liter of distilled water. It is not within the province of this article to discuss either how or why the solution acts, but from the point of view of the therapeutist the all-important question is whether the use of this treatment increases the excretion of urine to such a degree as to relieve the symptoms, uremic and otherwise, which are attendant upon a partial or complete suppression of urine. After all, the "proof of the pudding is in the eating," and a series of cases will be described as indicating some of the conditions in which this form of treatment may be usefully employed.

Persistent Vomiting of Pregnancy.—In the first case to be discussed, the use of Fischer's solution was not employed with any idea of affecting the urinary excretion, but it occurred to the writer that it would make an excellent vehicle in which to carry other medicinal agents, should it be found desirable to give rectal medication in such cases where it was impossible or inadvisable to give remedies either by mouth or hypodermatically.

The opportunity to put this conclusion to a practical test came when the writer was called to the bedside of a patient suffering with persistent vomiting of pregnancy. She was in the third month of the uterine gestation of her first pregnancy, twenty years of age, and of a highly neurotic temperament. Vomiting had begun some three weeks earlier, and had become progressively more frequent and severe until at the time when she was first seen she had retained nothing but a little cracked ice for a period of nearly sixty hours. She suffered acutely from thirst, prostration and a sharp, gnawing hunger, but the sight of food, or even its slightest odor, brought on immediate vomiting; and the vomitus finally became streaked with bright red blood.

Various measures, such as cerium oxalate, bismuth subnitrate, cocaine hydrochlorate, internally; ice caps applied to the epigastrium, etc., externally, were employed to relieve this condition, but without result. Finally, on the evening of the fourth day sodium bromide, 20 grains, was dissolved in one pint of Fischer's solution and given per rectum by the drop method, about two hours being employed in giving the sixteen ounces; the thirst was at once relieved and the patient dropped into a deep sleep, awakening in the morning much refreshed; another twenty grains of the bromide in a pint of Fischer's solution was given by the same method. At noon a teacup of bouillon with half a slice of plain toast was given by mouth; it was greatly relished by the patient and produced no nausea. A larger quantity of the same nourishment was given at 4.00 and 8.00 p. m., with no ill effect. The next day she ate her usual breakfast, dinner and supper, and neither then nor at any subsequent period of her pregnancy did she have a return of either nausea or vomiting.

In a case to be described later on reference will be made to the giving of strychnine sulphate dissolved in Fischer's solution, and in that case the action of the drug as effecting the circulation was plainly perceptible; now, both bromides and alkaloids are supposed to be precipitated by alkalies, and hence to be incompatible, but in neither of these cases did precipitation occur as far as could be observed, and in both the action was prompt and satisfactory.

While the writer has not made the attempt, it should be possible to give any of the soluble iodides with Fischer's solution, especially in such cases where they are not well borne by the stomach. In fact, the use of Fischer's solution as a vehicle would only seem to be limited by its ability to hold the desired agent in solution.

Chronic Nephritis.—The second case deals with a patient who had had a chronic nephritis for a period of nearly ten years, showing itself by the presence of granular and hyaline casts in the urine and also by the finding, from time to time, of albumin in small amounts.

After a number of days of great mental and physical exertion, during which time the excretion of urine had been scanty, probably between 15 to 20 ounces, per day, the patient developed uremic symptoms. Prominent among these were a heavy urinous odor of the breath; semi-unconsciousness from which he could be but partially aroused, and pulmonary edema; associated with an hemiplegia involving the left side, interfering with articulation and making deglutition difficult. In con-

sultation with Dr. F. H. Lamb, efforts were at once directed toward inducing the kidneys to resume the excretion of urine, of which there had been none for a period of eighteen hours. With this object in view, and also to open the bowels, citrated caffeine, 3 grains, and calomel, ½ grain, were given at four and two-hour intervals, respectively. At the same time, 1 dram of the saline ingredients of Fischer's solution dissolved in water was slowly given by mouth every two hours. This treatment was instituted at nine in the morning of the first day, and the following amounts of urine were voided: 1.00 p. m. (same day), 12 oz.; 9.20 p. m., 12 oz.; 11.30 p. m., 16 oz.; 1.40 a. m. (following day), 4 oz.; 3.40 a. m., 3 oz.; 8.30 p. m., 8 oz.

At this point the calomel was discontinued, and rubinat was given at 7.00 a. m. and at noon. The bowels began to move at 1.45 p. m., and moved five times up to 6.20 p. m.; probably there was some urine voided during that time, but not in any great amount. An examination showed much albumin and casts of every description.

At this point, as the Fischer's solution was not being well borne by the stomach, and as swallowing was becoming more and more difficult, it was discontinued by mouth and given by the drop method per rectum for a period of two hours, with two-hour intervals. At midnight a considerable quantity of urine was passed involuntarily, followed by: 3.00 a. m., 8 oz.; 7.00 a. m., involuntarily; 8.30 a.m., 8 oz.

Thus, at the beginning of the third day the kidneys showed evidence of increase in their activity, otherwise the patient showed no improvement, and 1.00 p. m. found the temperature 101.4° F., by axilla, pulse 112, respirations 34, and the pulmonary edema was increasing. Adrenalin chloride, 1 to 1,000, was given in 5-drop doses by mouth every two hours, and the citrated caffeine was reduced to 2 grains. During this twenty-four-hour period, 34 ounces of urine were voided, the albumin and casts were much reduced, and the fourth day showed improvement in the general symptoms. The solution was continued either by rectum or mouth, and the amount of urine increased from day to day until by the eighth day 56 ounces were passed, with but little albumin and few casts. Convalescence was slow, but eventually the patient was able to resume his usual duties.

Typhoid Fever.—Every physician in general practice is familiar with the importance of the part played by renal insufficiency in those patients who are suffering from acute diseases of any kind; also that such a complication is not only liable, but is almost certain to occur in that class known as "chronic alcoholics," and that the appearance of uremic symptoms at once makes the prognosis exceedingly grave. Therefore, any form of treatment which aids the kidneys in performing their normal function should have a marked effect by either lessening or entirely eliminating this dangerous complication, and thus giving the patient a considerably better chance of ultimate recovery.

With this object in view, Fischer's solution was used under the following circumstances in a case of typhoid fever in a male patient, thirty-five years old, who was known to have been a steady drinker for some fifteen years, and who had been under treatment at various times previous to this sickness for an alcoholic gastritis, and had also been threatened more than once with delirium tremens.

The onset and course of the disease during the first ten days did not differ materially from the picture which typhoid commonly presents, but at the end of the second week the urine became scanty, an active delirium appeared, which was quickly followed by coma. On the thirteenth day the patient passed but eight ounces of urine, which was highly colored and smoky; an examination showed that the specimen contained albumin and was loaded with casts, chiefly epithelial and granular. At this point Fischer's solution was given per rectum by the drop method, being used continuously for four hours. It was then withdrawn for a period of two hours and then resumed for four hours; in this manner the solution was employed for two days.

During the first twenty-four hours the amount of urine was increased, probably about twenty ounces being passed, most of which, however, was voided involuntarily. The next twenty-four hours showed a still further increase, and on the third day the patient regained consciousness and the amount of urine for the day was in the neighborhood of 40 ounces; his mind was perfectly clear, but on the next day he had several attacks of syncope, due to an acute dilation of the heart superimposed upon a chronic myocarditis, from which the patient succumbed a few days later.

In this case there would seem to be no doubt but that the use of this solution had a most decided effect in relieving the uremic condition and the symptoms attendant upon it, and should be of great value in treating the acute illnesses of the chronic alcoholics, especially diseases which run a

less protracted course, as pneumonia. It is also entirely possible that if used early it might prevent the onset of delirium tremens as a complication of severe injuries when inflicted on this type of patient.

Chronic Myocarditis.—The fourth case in which Fischer's solution was used, was for a patient in whom the primary trouble was a chronic myocarditis, plus a mitral regurgitation, associated with a moderate degree of arteriosclerosis. She was seventy years of age, and had had attacks of myocardial insufficiency of moderate severity for at least two years previous to the time that she was first seen by the writer. On that occasion an examination showed edema of the lower extremities extending to the knees, ascites, no edema of the hands, arms or face, lips and finger nails somewhat cyanotic, considerable dyspnea with pulmonary edema, causing almost constant coughing, the pulse was weak and irregular, a cardiac murmur was heard at the apex and transmitted to the axilla, no temperature, and the bowels open; between 30 and 40 ounces of urine was passed in twenty-four hours, which showed no especial abnormality; patient complained of nausea but had no active vomiting; sat in a chair and moaned continuously but complained of no acute pain.

Treatment was instituted at once in the form of tincture of strophanthus, ♏ vii; adrenaline chloride, 1:1,000, ♏ viii, and digitaline, grn. $\frac{1}{30}$, plus citrated caffeine grn. ½, given by mouth at six-hour intervals, being four doses in the twenty-four hours.

Within two days there was noticeable improvement, the cyanosis and pulmonary edema disappeared, there was less coughing and dyspnea, the pulse was more regular and stronger, compensation had been partially restored and the cardiac murmur was found to be presystolic. Medication was slowly reduced, and for two weeks the patient was comparatively comfortable. At the end of that time the amount of urine, which had averaged about 35 ounces per day, dropped to 15 ounces, and then to 10 ounces, accompanied by vomiting and a general edema involving the entire body; an examination of the urine showed some albumin and hyaline casts; the cardiac action remained as it had been during the ten days previous. All medication, either by mouth or hypodermically, had of necessity to be discontinued. At 2.00 p. m. Fischer's solution was commenced, being given per rectum by the drop method, four hours being employed in giving one quart; at 8.00 p. m. the solution was resumed, and another quart was given between that time and midnight.

The first urine was voided at 10.00 p. m., and from then until noon of the following day one gallon of urine was passed; also small punctures were made in the skin of the back of the hands from which much fluid escaped. At the beginning of the following day the edema and ascites were lessened and the vomiting not so severe, but the giving of medication by any of the usual methods continued to be impossible. This condition was quickly reflected in the action of the heart, which became weak and very irregular, making it imperative that cardiac stimulation be employed in some form. In the hope of producing the desired effect, strychnine sulphate, $\frac{1}{30}$ grain, was dissolved in one pint of Fischer's solution and given per rectum. The pulse became more regular and the volume better. From 4.00 to 6.00 p. m. another $\frac{1}{30}$ grain of strychnine sulphate was given in the same way, and by 8.00 p. m. the characteristic wiry character, due to the strychnine, appeared in the pulse. Two and one-half quarts of urine was voided in this twenty-four hours, and the morning found the patient much relieved with no vomiting, very little ascites, and the edema confined to the lower extremities.

The quantity of urine passed since that time (about four weeks) has averaged 40 ounces daily; and any time that the quantity falls below 30 ounces, 1 pint of the solution is given per rectum night and morning, and the amount of the urine has not failed on each occasion to increase to over two quarts.

Postpartum Eclampsia.—The last and most interesting of this series of cases is one in which Fischer's solution was used with striking results in a case of postpartum eclampsia. The patient was a young primipara who was delivered of twin babies after being a little over four hours in active labor. There was nothing especially unusual about the delivery, the fact that the babies were some four weeks short of full term doubtless accounting for the labor not being protracted.

The writer had been called to attend the patient for the first time at the commencement of parturition, and so had no chance of making a urinary examination. There was no edema of any part of the body, and the patient gave the history of having passed urine from time to time, though the amount could not be determined.

That night shortly before twelve she was attacked by eclamptic convulsions which were neither frequent nor severe,

and veratrum ♏ xv. was given by mouth and ordered repeated at three-hour intervals; morning found the patient with her eyelids, feet and ankles swollen, pulse 120, in a semi-comatose condition, and the convulsions occurring every hour. Fifteen minims of veratrum was given hypodermatically and repeated in 20-♏ doses by mouth. Between 2.00 and 3.00 p. m. Dr. W. R. Griess saw the patient in consultation, and it was his suggestion that venesection be employed before giving the Fischer's solution intravenously.

The convulsions were now becoming more and more severe and fifteen minutes apart, the patient was entirely unconscious, unable to swallow, had much pulmonary edema, intense cyanosis, while the pulse remained in the neighborhood of 120; the veratrum was given in 15-♏ doses hypodermatically every twenty minutes for four doses. With the aid of the nurse, who had just arrived upon the scene, the writer cut down on the median basilic vein of the left arm and removed 16 ounces of blood which was as black as the blackest ink; at this point the patient had a convulsion of terrific severity, the lips and face became black, great quantities of black fluid gushed from nose and mouth, every muscle in the body was rigid, the eyes wide open and the pupils fully dilated; suddenly all the muscles relaxed, the chin fell forward and the head back on the pillow, and to all appearances the patient was dead; however, in a few moments a very shallow respiration was resumed.

Into the already opened vein 1½ pints of Fischer's solution was given, requiring some thirty minutes for its introduction; a very slight convulsion occurred just as the incision in the arm was being closed and that was the last convulsion from which she suffered, the respiration became deeper and the cyanosis was less marked. The solution was given per rectum all night, the amount of urine, which was voided involuntarily was increased; eighteen hours later the patient regained consciousness and during this time the solution was given per rectum at frequent intervals, convalescence was rapid though albumin was found in the urine in diminishing amounts for two months. To-day, when more than a year has elapsed, she has no trace of albumin and seems to be perfectly well.

Mention must be made of the aid given by Miss Licking, a graduate nurse of the Jewish Hospital, but for whose great skill and untiring devotion to the patient a successful outcome could not have resulted.

POISONING BY MALE-FERN

An unusual case of fatal poisoning by the administration of male-fern as a vermifuge is reported by M. C. Hall, of Washington, D. C. The patient was a young man who suffered from constant hunger and feverishness at night and was prescribed for by a so-called "Quaker doctor" or Indian doctor of Joplin, Mo. He died in convulsions and with tetanic symptoms after taking a large quantity of what seems to have been extract of male-fern. The striking features of the case are, first, that there was no evidence that the patient had tape-worm, and secondly, that a doctor should send a poison as strong as oleoresin of male-fern in excess of the usual dose to be given to a person in another state and followed up by castor-oil, which increases the absorbability and toxicity of the drug. There was always the possibility that consulting by letter an advertising "Indian or Quaker doctor" may cause a patient's death.—Jour. A. M. A.

INTRAVENOUS ADMINISTRATION OF MERCURY

J. Kingsbury and P. E. Bechet, of New York, give their experience with the intravenous injection of mercury in a number of cases of cutaneous syphilis in its various stages. They first used the bichloride in doses of from one-sixth to one-third grain in distilled water, and on the average six injections were given in each case. Their best results were obtained with this salt. The technic is simple, provided the subject has prominent veins. The amount of solution they used varied, of course, with the dose, but rarely exceeded 12 Cc. The advantages are: The immediate introduction into the circulation of the curative agent with consequent rapid therapeutic results, accurate dosage and absence of pain. The disadvantages are: Occasional periphlebitis and phlebitis which occurred more frequently in their earlier cases when they used more concentrated solutions. With greater dilutions these were rare. A few patients suffered from ptyalism, which quickly subsided in a week or two. A few others had mercurial diarrhea, but in no case was the complication more than temporary. The results were uniformly good, and several cases are mentioned which specially impressed them. They do not, however, recommend it to be used indiscriminately or as a routine method. Its value is in properly selected cases.—Jour. A. M. A., Aug. 15, 1914.

THE MAJORITY OF KIDNEYS found hydronephrotic post-mortem give no symptoms during life.—Am. Jour. Derm.

Progress in Materia Medica and Therapeutics

ALKALINE TREATMENT OF SEPTIC PROCESSES

Vorschütz writes that the administration of an alkali whips up the cells, causes an edematous loosening up of the tissues, augments the secretion of urine by its action on the kidneys, raises the blood-pressure, and increases the appetite. The cell is whipped up in its work of metabolism and of elaboration of antitoxins; consequently the alkali does no good unless the cell is capable of responding. He gives the details of nine cases and considerable experimentation on animals to demonstrate its action and also to prove that a deficiency of alkali is responsible for defective production of antibodies. By this means he is convinced that he has tided certain patients past the danger stage who would have been lost without it. He mixed 10 or 20 Gm. of sodium bicarbonate in a bottle of seltzer water and had the patient drink this during the day. Children took half this amount. Some of the patients took this for weeks without disturbances; a healthy stomach rebels at these large doses of an alkali. Sometimes pain in the stomach compelled suspension for a day or so, but diarrhea was regarded as useful unless too profuse. The alkali can be given by proctoclysis or by intravenous infusion. The cases reported were severe septic processes, osteomyelitis, scarlatinal nephritis with abscess, etc., and all recovered.—Deutsche Zeitschr. f. Chir.

HYPERTHYROIDISM

The relations of pathologic conditions in the nose and throat to the origin and treatment of hyperthyroidism is the subject of an article by S. P. Beebe, of New York. He first notices the theories of the internal secretion and its functions and shows how experiments and clinical observations have demonstrated its antitoxic actions and protection against various pathologic conditions. The relation of thyroid disease to previous infections has been noted clinically by many observers. The terminal event in hyperthyroid patients is often an infection which has begun in the tonsils, and Beebe says that he has not seen a necropsy in these cases which did not disclose the characteristic pathology of status lymphaticus. He also mentions the common occurrence of hyperthyroidism in women and its relation to the function of the sex-glands as bearing on this question. A large percentage of patients with exophthalmic goiter have enlarged tonsils and adenoids, and give a history of repeated attacks of acute tonsillitis. It is not uncommon for them to date the beginning of the goiter to one of these. Infections of the nose and throat are undoubtedly the commonest to which man is subject, and many of our ills might, if one was so disposed, be credited to them. Recent experiments as to the specific infection of hyperthyroidism are mentioned by Beebe and he says if the thyroid secretion is an important element against infections it is not impossible that it is stimulated to over-activity when occasion calls for it, and if this is too often repeated the gland may become enlarged and a pathologic condition induced. It is not a rare thing to find that a rapid enlargement of the thyroid with characteristic symptoms of over-activity has immediately followed a particularly severe tonsillar infection. Such patients bear these infections badly; are prostrated and slow in getting well. In exophthalmic patients there is no more dangerous or troublesome factor than the tonsil infections to which they are liable, and they should be carefully guarded against them. If the patient's condition permits, tonsils and adenoids should be removed. This should not be done, however, during active thyroid intoxication without appreciating the fact that these patients bear operations badly, and every precaution should be taken to avoid shock. It becomes at times more important in exophthalmic goiter when considering operation to first attend to the infected areas. Beebe says that every young patient with an enlarged thyroid should have a careful examination of the nose and throat and the converse is equally true. Between the age of twelve and twenty is the beginning point of most thyroid enlargements, and it has been his observation that the combination of enlarged tonsils and adenoids, gastric disturbances and constipation and an enlarged thyroid is the beginning of the condition which does not usually attract much attention unless the patient is annoyed by the cosmetic defect in the neck. Hyperthyroidism can be checked in such patients before serious damage is done if its beginnings can be recognized. Too frequently it is overlooked.—Jour. A. M. A., Aug. 29, 1914.

CARAMEL IN DIABETES MELLITUS

In view of the trend, which the newer conceptions regarding the nature of diabetes are taking, E. Grafe, of Heidelberg, deemed an attempt to bring about a change in the sugar molecule by some physical or chemical process, as possibly productive of results, that would be of benefit to the diabetic. He subjected cane sugar to the influence of varying degrees of heat and found that the greater the heat, the more readily was the resulting product assimilated by diabetics. After many trials the most satisfactory substance was obtained by heating cane sugar in an aluminium pan for one-half to three-quarters of an hour at a temperature of 200° C. In his clinical investigations, Grafe also employed caramel derived from grape sugar, but for the greater part of his clinical work he used a preparation called carannose, which has an agreeable taste and is almost free from sugar. Caramel preparations of this kind have greater nutritive value than either cane or grape sugar, 4.3 to 4.6 calories being yielded by one gram of dehydrated caramel.

The amounts of caramel, which Grafe gave to his patients varied from 100 to 300 Gm. a day; usually 150 to 200 Gm. were administered either with puddings or baked with white of egg, or in solution with brandy or coffee. The quantity designated for one day was given in six parts. Most of the patients took caramel willingly, even for a long time. In serious cases the mode of employment was similar to that used by Von Noorden for his oatmeal cure, or it was given together with vegetable carbohydrate, fat and proteid, but only rarely with other carbohydrates. In mild cases, the caramel may be added to the usual diet. When a tendency to diarrhea was present, 100 Gm. were given the first day and if well borne, 150 to 200 Gm. were added in two or three days. Unless marked constipation exists, it is well to prescribe small doses of opiates or of tannin preparations in conjunction with or even a few days prior to the administration of caramel. These large amounts of caramel were usually given for from two to four days and repeated if necessary after an interval, during which vegetable days or a few days of strict antidiabetic diet were introduced. In the course of a year twenty-five cases of diabetes furnished material for investigation; three are reported in detail. As a result of observations in these twenty-five cases, Grafe states that caramel, exhibited in large doses, never leads to an appreciable increase in sugar excretion and as a rule acts favorably on acidosis. The latter effect becomes manifest especially if at least 100 to 150 Gm. are taken each day. As the preparation has considerable nutritive value it is possible to give even in the most severe forms of diabetes, 600 to 800 calories of carbohydrate, and if need be in fluid form. Regarding the indications for caramel, the facts brought out by Grafe show that it can be taken in large quantities and even with other carbohydrates by all diabetic patients, irrespective of the percentage of sugar in the urine. The most satisfactory results seem to be attained in serious cases, in which other carbohydrates are either not assimilated at all or to a very slight extent and in which acidosis is present. The only contraindication is the existence of marked enteric symptoms. In regard to its mode of action no definite statements can be made at present, especially as we are dealing with a substance that has not been carefully investigated either chemically or biologically—Münch. med. Woch. No. 26, 1914.

EPINEPHRINE IN URTICARIA

A. W. Swann reports a series of cases of acute urticaria and serum rashes in which the subcutaneous injection of a 1:1,000 epinephrine solution was followed by the disappearance of the erythema and wheals. In each case a dose corresponding to eight minims for a patient of 140 pounds was given. Two doses administered at intervals of ten minutes always sufficed to produce the desired results. Improvement was usually evident after seven to ten minutes; itching ceased in from five to twenty minutes after the first injection. In five out of the six cases, however, the rash and wheals reappeared in from one hour to three days.

Swann suggests that epinephrine given hypodermically may be used to advantage in certain more serious, yet similar conditions, of which angioneurotic edema (of the epiglottis and larynx) is a type, and that when so used the drug may be the means of saving the patient's life. Another condition which may be influenced by epinephrine in a similar manner is the severe bronchial spasm and edema which occasionally occurs in cases of anaphylaxis. Swann observed such a case in which epinephrine was used, however, without much benefit. The possibility of differentiating rashes of purely vasomotor origin from those of other types by means of hypodermic injections of adrenalin also suggests itself.—Archives of Pediatrics, July, 1914.

RHEUMATIC MALARIAL FEVER

N. Barlow has observed eight cases which suggest the existence of a rheumatic form of malarial fever. The condition may from the start be a multiple arthritis, or it may first appear as a neuralgia, as herpes zoster, or as a severe lumbar or sacral pain. The joints are involved in rapid succession, and there is the same tendency for the process to jump from one to another that is seen in articular rheumatism. The joint involvement is much less severe than in rheumatic fever. The swelling is entirely serous in character, and leaves no perceptible changes on subsiding. A carditis or pericarditis may simultaneously occur, as in rheumatism. The temperature is rarely as high as in rheumatism. The condition indicates a severe form of malaria, and is very likely to be followed by one of the so-called malignant complications. In treatment, rest in bed and attention to the bowels, with a light diet, are indispensable, and quinine should be pushed to the limit of tolerance, combined with moderate doses of bromide. It is best to give the daily amount of quinine in one dose, preferably as an intravenous injection of fifteen to twenty-five grains each of quinine bihydrochloride and sodium bromide dissolved in freshly distilled water. A single dose of five to eight grains of acetylsalicylic acid may be given daily to relieve pain. Large doses of salicylates or alkalies aggravate pain.—Med. Record, Aug. 8, 1914.

BENZOL IN LEUKEMIA

After noticing the observations of Selling on the effects of benzol on the white corpuscles and giving a brief review of the literature of its use in leukemia during the last two or three years, S. W. Sappington and W. A. Pearson, of Philadelphia, give full reports of three cases of leukemia thus treated. They are representative, they say, of the three principal varieties of the disease and the varying conditions. The benzol used was Merck's medicinal; it was given in gelatin capsules in two cases and in olive-oil in the third. The dose was 3 or 4 Gm. a day in the chronic cases and about 2 Gm. a day in the acute form. None of the patients suffered subjectively from the drug. After discussing the cases, with tabulated statements as to the blood-findings, the authors sum up as follows: 1. "In a case of chronic myeloid leukemia under benzol, treated previously and concurrently with Roentgen rays, the leukocyte-count remains relatively low though the formula is changed in favor of large mononuclears. The spleen remains the same size, but the patient generally is improved. The patient was under observation two years. 2. In a case of chronic lymphatic leukemia, benzol, without Roentgen assistance, restored the white count to normal. Later, Roentgen rays were used for a short period. The patient has now been without benzol or Roentgen rays for six months, yet the leukocyte-count remains low and almost within normal limits. The formula, however, has returned to a high percentage of lymphocytes. The spleen did not diminish in size and is now further enlarged. The patient was under observation one year. 3. In a case of acute leukemia, benzol seemed to have had no effect one way or the other on the blood or the size of the spleen. The necropsy findings were typical acute leukemia; there were no liver necroses or damaging effects of benzol apparent. Metabolism studies did not reveal any marked losses."—Jour. A. M. A., July 11, 1914.

GOLD CYANIDE AND BOROCHOLINE IN PULMONARY TUBERCULOSIS

The ability of gold and especially of gold cyanide to injure the tubercle bacillus was first mentioned by Robert Koch, but he did not investigate the matter therapeutically. Those who have done so since then, report encouragingly, although toxic effects were noted in some cases. Arthur Mayer points to experimental data, which speak against the toxicity of gold and potassium cyanide, when not more than 0.05 Gm. is used. Unfortunately its bactericidal action is interfered with markedly by the capsule of the tubercle bacillus. Mayer, therefore, made efforts to combine gold cyanide with some substance, which could overcome the resistance of the capsule. Werner and Ascher have shown borocholine to be very useful in this respect and Mayer combined this preparation with gold and potassium cyanide, Merck. After concluding from animal experiments that the combination was distinctly capable of preventing the extension of tuberculous lesions, he proceeded to use it clinically.

Sixty cases were treated with the remedy by means of intravenous injections. As he expected, no results were obtained in advanced phthisis. On the other hand, patients in the first and second stages of pulmonary tuberculosis where mixed infection had not occurred, were benefited to a remarkable degree, in some instances by a few injections. The benefits were manifested as follows: Of the forty-eight cases in the first and second stage, thirty-six showed no bacilli in the sputum after a course of treatment. As the number of tubercle bacilli diminished, a decrease of the soluble

albumin of the sputum also took place, a fact which, when determined by proper quantitative methods, is undoubtedly of importance. Changes in the physical signs were clearly for the better, dull areas became more resonant and there were fewer râles or they disappeared entirely. Serious by-effects such as albuminuria were not observed, nor did the preparation act hemolytically.

Since the completion of Mayer's investigations Spiess and Feldt have published their experiences with gold cyanide in combination with cantharidin. These authors confirm Mayer's opinion that of the gold preparations, gold cyanide is the most effective, that it acts specifically and that the tuberculous process is influenced by direct action upon the bacillus. Borocholine is regarded by Mayer as equal if not superior to cantharidin as a preparation for combination with gold cyanide, because besides being non-poisonous it dissolves the fatty capsule of the bacillus and thus renders the body of the microorganism accessible to the gold salt. At all events, Mayer believes that even at this early date, gold cyanide must be looked upon as destined to play an important rôle in the chemotherapy of tuberculosis.—Med. Klinik, No. 29, 1914.

CORPUS LUTEUM ORGANOTHERAPY

W. T. Dannreuther, of New York discusses the subject of organotherapy by administration of corpus luteum extract. He speaks of the unsatisfactory experience that he, with others, has had with the use of simple ovarian extract and maintains that corpus luteum is the chief structure concerned and the probable source of the internal secretion of the ovary. The particular conditions for which it is valuable and to which its use should be limited are, he says, functional amenorrhea, or scanty menstruation; ovarian dysmenorrhea; disturbances during the menopause and consequent on it; neurasthenic symptoms during menstrual life; sterility not due to pyogenic infections or mechanical obstruction; impaired function of one ovary without due compensatory activity of the other; repeated abortion not due to disease or mechanical factors and the early hyperemesis of pregnancy. He insists on the importance of using extract obtained from the ovaries of pregnant animals only, and thinks that the failure to do this is the cause of the lack of uniform success of many physicians. He uses 5-grain capsules three times a day, and has seldom had occasion to exceed this. There is nearly always a drop of blood pressure with its use and it should be discontinued if this is too rapid. Before beginning the treatment and weekly thereafter a careful sphygmomanometric reading should be taken and if the fall is more than 15 Mm. the treatment should be stopped until 10 Mm. of this has been recovered, when it may be cautiously renewed. The blood pressure should never under any circumstances be allowed to fall below 90 Mm. The question whether corpus luteum extract can replace the normal function of the ovary is, he thinks, answered by a case he reports in which menstruation was reestablished after a bilateral oophorectomy, the tubes also being removed for pyosalpingitis. The specimens removed by the operation were carefully examined and he is satisfied that no ovarian tissue was left.—Jour. A. M. A., Jan. 31, 1914.

TREATMENT OF PSORIASIS

Jay F. Schamberg, A. I. Ringer, G. W. Raiziss and John Kolmer, of Philadelphia, report the result of their study of psoriasis along two particular lines of inquiry—bacteriologic and metabolic. They have been unable to find any micro-organism which can be regarded as a casual factor. Twenty-two species of bacteria have been isolated from the scales and individually studied. Complement-fixation tests have been carried out with negative results and ineffectual vaccines made. The ultramicroscope and all sorts of special culture mediums have also been tried. They have not altogether abandoned this line of investigation, but so far it has been fruitless. During the past two years they have investigated the metabolism of about a dozen patients with psoriasis. They have carried out investigation of nitrogen balance in patients for long periods of time under the most rigid conditions: food received, analyzed and weighed, and the nitrogen output in feces, scales and even in perspiration carefully determined. Patients were housed in private rooms and under specially trained nurses. The qualitative as well as quantitative disturbances were studied. They soon found that they were dealing with a disease the subjects of which suffered from a peculiar disturbance of protein metabolism, having the power to retain rather large quantities of nitrogen on diet which in normal persons would barely maintain equilibrium. The psoriatic patient has the power of reducing the urinary nitrogen output to a level lower than has ever been recorded in the studies of protein metabolism. Clinically, there was seen a definite relationship between the protein

metabolism and the course of the eruption, the latter increasing with a high protein diet and diminishing without local treatment on a low one. The questions as to the relationship and the cause of the nitrogen retention, they think, are answered by consideration of the following: the rapid proliferation of epithelial cells composed almost entirely of protein in severe forms of psoriasis must entail a very considerable loss of protein material, and the growth impulse is accelerated or depressed by the kind of material at its disposal. It is evident, therefore, that any diet tending to increase the retention of aminoacids in the blood and lymph will tend to accelerate the growth and multiplication of these rapidly growing cells, and a high protein diet does this, while a low protein diet acts in the opposite way. No harm is produced by keeping a patient on a low protein diet provided the caloric diet is sufficient, and they give two different type diets which they have employed, in which the proteins were low, meat, etc., being excluded, and in addition, plenty of sugar allowed. The failures of physicians to influence psoriasis by diet, they think, are due to the lack of control of the patients. Their own results have been the best in their hospital patients where the exact kinds of food in measured quantities could be given. They have tested the influence of diet under the most critical conditions and feel fully justified in saying that the eruption of psoriasis may be favorably or unfavorably influenced by variations in dietary regimen. For the best results the diet should not contain more than 5 Gm. of nitrogen a day. They have reason to think that other dermatoses may be thus influenced. They have studied also the germicidal activity of chrysarobin. While it is the most powerful and efficacious drug known in psoriasis, it has practically no germicidal power and calomel, on the other hand, which is the most germicidal of drugs, has very little effect on psoriasis. They have made a series of experiments, which will be detailed at full length elsewhere, showing that chrysarobin has a powerful affinity for certain elements of protein, and they believe that this effect is in a large part due to two influences: (1) the firm union with the protein of the epithelial cells and (2) the abstraction of oxygen. It is quite possible that this may explain its good effects in psoriasis. They have chemically studied the substance and found that any change in the chrysarobin molecule affecting the hydroxyl groups diminishes its therapeutic value. They say: "We have produced a certain derivative of chrysarobin in which the hydroxyl groups appear to remain unaltered, which has greatly interested us. This new drug has been tried out by ourselves and other dermatologists to whom it has been supplied, and the general feeling is that it is superior to chrysarobin. It is also preferable to chrysarobin in that it is much cleaner and freer of disagreeable staining properties. The mode of standardizing the preparation of this drug has not been satisfactorily concluded by us, and we shall therefore delay the publication on this matter until a later date."—Jour. A. M. A., Aug. 29, 1914.

INULIN IN DIABETES

Inulin, a form of starch occurring in various Composites, as for example in the roots of elecampane and Jerusalem artichoke, has been tried by various observers for the carbohydrate nutrition of diabetics, but opinion regarding its value is divided. After Külz had recommended it, it was rejected by Naunyn and Socin. Lewis, as the result of his experiments, concluded that it could not be used as a source of energy for diabetics. He believes that the drug is only rendered useful when it is sufficiently hydrolysed, which is only effected by its remaining for a long time in the acid gastric juice. He states that it undergoes no alteration in the intestine and that it is probably excreted by the organism in an unaltered state. H. Strauss has, on the other hand, recently expressed himself in favor of inulin. He carried out experiments in a number of severe and fairly severe cases of diabetes mellitus, the results of which appear entirely to confirm his recommendation. With regulated diet the administration of 3⅓ ounces of inulin a day only led to a slightly increased excretion of sugar, as compared with the previous period of carbohydrate-free diet, and it exercised a distinctly favorable influence on acetonuria. Inulin was very well tolerated. The patients did not lose weight during inulin treatment, but rather gained in weight and there was no evidence that tolerance was affected, as Socin assumed to be the case. Of eleven patients, only two complained of slight gastric trouble at the conclusion of treatment, apart from which there were no complaints. In no case was there any evidence of intestinal trouble.

Comparative tests with oatmeal and wheatmeal soups showed that inulin was in every case better or just as well tolerated as these. With regard to the slight capacity of the intestine for absorbing inulin, which has been referred to above, it does not appear to differ considerably from that of

other forms of starch. In the absence of gastric subacidity, according to the results of Strauss' investigations, inulin, like other forms of starch, is converted into lævulose and absorbed. The circumstance that the prolonged administration of large quantities of inulin usually exerted an unmistakable influence on acidosis is in favor of this view. The author therefore feels justified in recommending the administration of inulin in diabetes as a beneficial procedure, superior to oatmeal and wheatmeal cures. —E. Merck's Ann. Report, Vol. xxvi.

TREATMENT OF INTESTINAL STASIS

The treatment of intestinal stasis, commonly called constipation, is reviewed by W. A. Bastedo, of New York. The recognition of the fact that poisoning may result therefrom has, he says, made it the subject of renewed interest. It is not necessarily a condition of infrequent defecation; it may be even accompanied by diarrhea or greatly relieved by a weekly cathartic. The measures of relief he suggests are habit formation of daily stools and prompt response to desire to defecate, exercise and massage, when done by some one with general anatomic knowledge and some knowledge as regards the general abdominal condition of the patient. It should not be done if there is any suspicion of duodenal ulcer, appendicitis or other inflammatory condition in the abdomen. Proper support of the abdominal walls and an inelastic support around the body from navel to symphysis should be applied the first thing in the morning and worn until bedtime in cases of intestinal stasis accompanying ptosis and weakness of the abdominal walls. In addition to this, any laxity in the pelvic floor should be attended to. So far as effects of diets on bowel movements or stools are concerned, they might be classed according to the chemical substances they contain, such as sugars and fruit acids, by their structural parts, by unabsorbed oils and fats and the chemical irritation produced, etc. Simple undereating is a cause of constipation, and the same is true of too ready digestion; in either case the residue is insufficient. The various constituents of food, such as fibrous tissue, fats, acids and salts, are enumerated. A dry diet favors stasis, but Bastedo reports the effects of an experiment of administering 8 ounces of water each hour in two normal cases and six cases of nephritis. In neither of these were the bowels specially affected, showing that large quantities of water do not act on the bowels. With a too dry diet, however, constipation is common. Of the medicinal agents which give bulk and soft consistency to the feces, the most commonly used are agar-agar, liquid paraffin and small, not expulsive, doses of the saline cathartics. As regards the liquid paraffin, it is sometimes inconvenient on account of its oily nature by the passing down as a free oil without mixture with the food contents, and sometimes it is not tolerated by the stomach. We do not yet know whether an unrefined article is harmful if used internally, but it is wiser, he thinks, to use the best. Saline cathartics should not be used in expulsive doses too often. Bastedo sums up the treatment of chronic intestinal stasis as follows: "Regularity of defecation, measures to improve intra-abdominal pressure, measures to increase peristaltic activity, and measures to increase the bulk and softness of the colon contents. In the average case attention to habits of life and to the amount and kind of food, and the administration of a softening agent or a very mild laxative will be effective in overcoming the stasis, and therefore, the toxemia. In severe cases the addition of an oil enema at night may work a marvelous change for the better. In these chronic cases the drastic cathartics should be omitted from use. If measures such as those spoken of, when carried out thoroughly, do not overcome the stasis and the toxemia, the question of surgery should be seriously considered."—Jour. A. M. A., Aug. 29, 1914.

ALKALIES IN DIABETES MELLITUS

Experiments of Rona and Willenko have shown that the glycolytic function of the blood and of the organs is extremely sensitive to the slightest increase of acid in the organism. G. G. Wilenko, of Carlsbad, considers this fact of practical importance especially for the treatment of diabetes. Although not explained theoretically, it is known that the faulty sugar metabolism, which characterizes diabetes, is aggravated when acids accumulate in the system. Since the introduction of methods for determining the carbonic acid in the blood, we have furthermore learned that when the CO_2 of the blood is less than normal, the amount of fixed acid in the organism is greater than normal. By further investigations along these lines, it has been ascertained that excess of acid not only exists, as expected, in diabetics with acetonuria, but also frequently when no acetone is found, and besides that a diet, free from carbohydrates and rich in meat, leads to formation of acid in the diabetic organism.

In accordance with these facts, the author thinks that the indications for the administration of alkalies have broadened

and states them as follows. As heretofore, all diabetics with acetonuria should take alkalies. When no acetone appears in the urine, alkaline medication must be introduced as soon as blood examinations reveal the excess of acid. For all diabetic patients, whether free from acetone or not, alkalies should be prescribed, whenever they are placed on a strict diet. The author lays special stress on this last point, as it may prevent the acetonuria, which so often occurs with diets, from which carbohydrates are removed.

Wilenko believes that the alkalies can prevent an accumulation of acid in the system and neutralize it, if already present. The present state of our knowledge, however, does not justify the conclusion that they influence directly the underlying cause of the abnormal production of acid. Alkaline therapy is therefore a symptomatic one, but especially valuable because we know no causal treatment for diabetes.—Med. Klinik, 1914, No. 24.

TREATMENT OF PARAGEUSIA

T. F. Reilly, of New York, writes that parageusia, or bad taste in the mouth, has been so long associated by physicians with digestive disorders that the fact is often overlooked that it is frequently an expression of other diseased conditions. The author's attention was first drawn to it when studying several patients variously afflicted with diseases of the intestinal tract associated with high arterial tension and bad taste. In the early stages of chronic interstitial nephritis the patient had this symptom only on rising in the morning, and in this it closely resembled the suboccipital headache characteristic of early nephritis. In general, the prognosis seemed to be worse the more constantly the bad taste was present. In many instances this had been the only symptom complained of, and when a patient (particularly a person of forty-five years or over) came complaining of persistent bad taste, a blood pressure examination should be made. This sign often preceded other symptoms by a month or more. In the cases associated with flatulence, bromides acted best. In those without flatulence digitalis, either alone or with hydrochloric acid, had produced the best results. The vasomotors, such as nitrites, had not caused any improvement. In a few cases diuretics had answered well. Next in frequency he had found this complaint associated with gallstones and cholecystitis, and in most instances the taste was described as bitter, like gall, though in a few cases it was like musty eggs. This gall taste had been practically always present in drainage operations of the gallbladder, and persisted as long as the bile drained. In several cases of catarrhal jaundice it had been noted from three days to a week before the appearance of the jaundice. In the bad taste observed in acute digestive disorders, calomel followed by rhubarb and soda was generally all that was necessary; occasionally, hydrochloric acid answered better. In the bad taste in cases of pulmonary tuberculosis, antipyretics of the coal tar series might be of service. The bitter taste sometimes associated with coryza was occasionally relieved by adrenaline spray. Oftener there was a complaint of no taste, or that everything tasted the same. In acute rheumatic fever a disordered taste, bitter or acid, appeared to be present in about 60 per cent. of the cases. Kleiner thought that the salicylates relieved it. In two cases of pernicious anemia a persistent bitter taste had preceded the other clinical symptoms by six and eight months respectively. The bitter taste often complained of by decompensating cardiac patients was analagous to that in nephritis, and could usually be lessened by digitalis and diuretics. Patients with arteriosclerosis sometimes complained of an inversion taste—salty things tasting sweet. In disease of the central nervous system, anomalies of taste occasionally occurred, and were often due to syphilis. As the result of a year's close questioning of patients on the subject he was convinced that persistent bad taste in the mouth was always an expression of a serious toxemia, and frequently of very great service in the early diagnosis of disease.

TREATMENT OF DIPHTHERIA CARRIERS

H. R. Miller, of New York, reports a method for the treatment of diphtheria carriers which seems to have considerable value. The method consists in thoroughly spraying the throat with a solution varying in strength from ¼ to 1 per cent. of the usual 40 per cent. formaldehyde solution. The patient's throat is sprayed one hour before, or two hours at least after the ingestion of food or fluid. The spray is usually used every three or four hours except during sleep. The throats were sprayed daily and cultures taken from five to eight hours after the solution had been used. When the throat became free from bacilli, later confirmatory cultures were made. Because formaldehyde acts better upon organic material when used warm or almost hot, the solution used in the last five cases was warmed in a corked bottle

before use. It was freshly prepared daily. In general the author advises that one begin with a solution of ¼ or ½ per cent. made up from 40 per cent. formaldehyde. When necessary, the solution can be increased to 1 per cent. and be less frequently applied. Three, four, five or even six days of treatment may be required, but there should be persistence in the treatment. The urine should be examined daily so as to discover any effects on the kidneys. In none of the cases treated has there been any evidence of any renal irritation. In the series of cases observed thus far no case failed to become diphtheria-free except one not directly under the author's supervision.

The procedure suggested is a simple one and does not produce any untoward symptoms. It will be of interest to determine whether the spray will influence the clinical course of diphtheria, and also whether the accessory sinuses can be cleared of diphtheria bacilli by its use. Because of the good results obtained the author suggests the use of the spray in acute cases of diphtheria in which antitoxin has already been administered, also its prompt use in cases where antitoxin is for some reason or other withheld temporarily or permanently.—Med. Record, July 25, 1914.

THE TREATMENT OF INOPERABLE TUMORS

H. Simon describes the various methods which have been suggested and tried for the cure of inoperable malignant tumors. Under the collective name of bacteriotherapy he describes the attempts which have been made to treat cancer by giving an attack of erysipelas or other bacterial disease. Fehleisen is sad to have suggested that streptococci possess a power of inhibiting the growth of tumor cells. At present the idea of utilizing bacterial means in the treatment of malignant disease is limited to the toxins of the bacteria or a corresponding form of antitoxin. Coley's fluid proved itself to be of less use than was at first supposed and much more dangerous, while the antitoxic method of Emmerich and School proved an absolute failure. He concludes that the idea of imitating the occasional curative effect of an intercurrent infection in the treatment of malignant disease must be limited to very exceptional conditions. Next he deals with immunization. He crystallizes the whole subject by stating that benefit from immunization can only be expected if the disease depends on a virus. The opponents of the parasitic theory of cancer must deny the possibility of good being done by attempts to immunize. Richet and Héricourt injected suspensions of tumors gained by operation into animals, and utilized the serum of the animals for treatment purposes. The results did not lead to satisfactory results. Schmidt and Doyen, among others, claimed to have found the causal parasites, and from these they prepared their curative substances. In no case, however, have these or similar methods yielded curative results. More recently the method of so-called autovaccination has been introduced. But the author regards it essential before such a method could be largely employed for proof to be forthcoming that the injection of a suspension of tumor cells cannot produce the disease afresh. In 1893 Lassar demonstrated three cases of skin carcinoma which he had cured with arsenic, applied internally and subcutaneously. The patients were free from recurrence after eight years. Zellar has quite recently combined an arsenic paste with internal medication with sodium and potassium silicate. A circular inquiry addressed to the directors of all the German surgical university clinics elicited a doubtful reply as to the value of this treatment. Wassermann found that in mice the intravenous application of a combination of eosine and selenium cured cancerous tumors almost with certainty. Unfortunately the attempts to apply this treatment to man have proved disappointing. Werner and Exner have introduced a treatment with lecithin which has been subjected to the action of radium. It was found that the dissociation product of the lecithin thus obtained was cholin. He expresses himself very cautiously as to the therapeutic value of this preparation, but throws a doubt as to the correctness of the theoretic basis of the treatment. After dealing with X-ray treatment of cancer in a brief manner, he mentions that it is significant that men like Krönig, Bumm, and Döderlein are now prepared to accept the responsibility of subjecting operable patients directly to an intense radiological course. The next physical method of treatment mentioned is fulguration, which he accepts as a valuable supplementary treatment. It is true that the hopes expressed with regard to fulguration have not been fulfilled, especially in France, but there can be no doubt as to the power of cleaning up sloughing wounds by this measure. Diathermic treatment has advanced considerably within recent times, and one of the most important advantages attached to the employment of Forest's needle and similar instruments is that a knife which might conceivably infect a distant healthy part is avoided.—Berl. klin. Woch., Jan. 12, 1914.

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SEPTEMBER, 1914

EDITOR'S NOTES

Optochin in Pneumococcus Affections of the Eye

Goldschmidt, of Leipzig, is of the opinion that the rational therapy of serpiginous ulcer of the cornea must be chemotherapeutic in character and that the quinine derivative optochin (ethylhydrocuprein hydrochloride) is a preparation, which meets all the requirements. Its best effects can, however, only be expected, if certain principles are strictly adhered to in its application. In the first place it is essential to determine the microorganism, causing the corneal ulceration. All that is required for this is that a smear of the secretion of the ulcer be stained by the Gram method. Optochin should not be used if pneumococci are absent, but if they are present the treatment must be carried out as indicated below, otherwise the pneumococci are likely to become resistant to the action of the remedy. The preparation must be used in as concentrated a form as possible without injury to the eye and Goldschmidt regards the following ointment as the most satisfactory: Optochin hydrochloride 0.1 Gm., Atropine sulphate 0.2 Gm., Amyl. trit. 2.0 Gm., Vaseline ad 10.0 Gm. It is inactive after four days. Some of this ointment is to be placed in the conjunctival sac five or six times pro die at regular intervals and distributed by gentle massage. An adhesive plaster dressing is applied to keep the preparation in the conjunctival sac as long as possible. As the first application is rather painful, it should be preceded by anesthetization with 3 per cent. cocaine. Subsequent treatments are painless, because optochin itself possesses anesthetic properties. The chemosis that occasionally occurs, is of no significance.

The other essential, which Goldschmidt considers important, is that the treatment should not be undertaken unless the five or six applications of the ointment can actually be carried out. If a case of serpiginous ulcer is seen for the first time at night, optochin should not be used. A 5 per cent. noviform atropine ointment may be employed, but the initial application of optochin is not instituted until the next morning.

The method, outlined, is continued until the ulcer is absolutely clean. This is usually accomplished in from one to three days. Then a 5 per cent. noviform ointment with atropine is introduced into the conjunctival sac twice a day until the process of healing is complete. No bandage is required. In over 100 cases the author reports progression in every case. Reinfection did not occur.

The clinical course of pneumococcus ulcers, complicated by deep corneal infiltration is not so favorable. The bacteria in these ulcers are located in the depths of the tissue and naturally optochin cannot act upon them as well as in more superficial lesions. The treatment of such cases requires more time and is continued until slight turbidity and dryness and a somewhat bluish lustre is observed on the surface of the cornea.

It is especially noteworthy that diseases of the lachrymal sac, which formerly acted so unfavorably on the course of ulcers of the cornea, have no detrimental influence at all when optochin is employed, because it continuously destroys the pneumococci, which are entering the conjunctival sac from the lachrymal sac. In other pneumococcus affections such as dacryocystic phlegmon and catarrhal conjunctivitis due to this microorganism optochin is also effective. A 1 per cent. ointment without atropine, applied three times in the course of one day, is usually sufficient for these cases. Another important field for the application of optochin is the prophylaxis of serpiginous corneal ulcer. If in the presence of chronic dacryocystitis, an erosion of the cornea occurs, five to six treatments with the 1 per cent ointment will prevent the formation of a serpiginous ulcer. Goldschmidt likewise advocates three treatments with optochin on the day preceding an operation on the eyes of all cases, in which pneumococci are demonstra-

ble. In rare cases only, in which the pneumococcus seems to be especially virulent does it fail to act beneficially. The remedy has, furthermore, the chemotherapeutic property of killing the microorganism without producing permanent injury to the tissues. The resulting scar is, therefore, as small as possible, and as the scar tissue is not dense, relatively good vision is preserved.—Münchener med. Woch., No. 27, 1914.

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The Treatment of Uterine Hemorrhage in Young Women

In dealing with this subject, Schickele, of Strassburg, considers only the menorrhagia and metrorrhagia that occur early in life and does not refer to hemorrhages, which are the results of inflammatory conditions, displacements or tumors of the genital organs. He points out that uterine bleeding in young women is frequently followed by normal menstrual conditions even without medical aid, showing that no real disease existed, but merely a transitory disturbance, varying with the individual. Many cases of profuse menstruation are cured by ergot preparations, given per os, subcutaneously or injected into the cervical tissue, a fact pointing to inadequate contraction of the uterine muscle as the etiological factor. Numerous patients are met with in whom the ergot group is of no benefit and in whom curettage is done. Frequently, however, the curettings show no diseased mucous membrane and the operation stops the hemorrhage, because in Schickele's opinion, the scraping causes intense contraction of the uterus. Permanent benefit from curettage in cases, in which profuse menstruation is due to disturbance of internal secretion, is not to be expected, although Schickele has observed in such patients improvement in regard to the regularity, but not to the intensity of menstruation. He believes the curette is used much too often and that in most cases it does not produce permanent benefit. Curettage is, however, not to be discountenanced in all cases as the possibility of hemorrhage, due to an incomplete abortion at a very early stage, even in very young persons, must not be forgotten and furthermore in very profuse bleeding, curettage is the only procedure which always succeeds in controlling the hemorrhage. It should in such cases be followed by packing of the uterus with gauze, saturated in a 5 or 10-per cent. soda solution, as this causes very strong contraction of the uterine muscle.

Often a change of climate, employment or nourishment has a beneficial influence on profuse menstruation. Menorrhagia frequently ceases in poorly nourished women when their general condition is improved, probably because more efficient function of the ductless glands is brought about in this way. Excessive menstrual bleeding, occurring in tuberculous or chlorotic patients, is ameliorated by treatment of the constitutional disease. Constipation deserves special attention as it often causes menorrhagia as a result of the hyperemia of the pelvis produced by it. In spastic constipation Schickele recommends belladonna.

Frequent and copious menstruation in individuals, possessing a hypersensitive vasomotor system, is usually controlled by proper dieting, aided by hydrotherapy and the administration of calcium salts, provided this treatment is carried out systematically for a long time. When hypoplasia of the uterus exists, ovarian extract is indicated. In cases in which evidence of disturbance of internal secretion is obtained, Schickele considers the diet of great importance. It should consist mainly of vegetables, coffee and alcohol being avoided. He also advocates large doses of sodium bicarbonate, 90 to 150 grains a day for these patients.

Recently numerous organ extracts have been recommended for menstrual disturbances. Some authors report good results in elderly women from mammary extract. Perhaps it will also prove of value for hemorrhage in youthful patients. Striking beneficial action is mentioned by many as being obtained with hypophysis preparations. Schickele's experience leads him to conclude that the latter are efficient in certain cases only. He believes their ability to cause contraction of the uterus probably accounts for their efficacy in uterine hemorrhage, but agrees that a complete explanation of their action is not as yet available.

Regarding the use of X-ray in the treatment of excessive menstruation in young women, not much has been written. Some authors have employed the rays with success. Schickele, however, looks upon this form of treatment as unjustifiable, as long as we do not know to what extent the action of the Roentgen rays interferes with subsequent pregnancies.—Med. Klinik, No. 28, 1914.

It Is Worth While inaugurating the treatment of "idiopathic" pruritus ani by the administration of santonin or of enemata of quassia infusion—seat-worms may escape discovery on one or two examinations.—Amer. Jour. Surg.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

The Teeth of an Army.—In discussing the teeth of an army, we are not indulging in any martial figure of speech; we are simply recalling the very literal sufferings of the English soldiers in the South African campaign from lack of attention to their teeth, as noted in the British Medical Journal for August 22, 1914. That journal observes editorially that, complying with a suggestion of the British Dental Association, the director general of the army medical service has gratefully accepted the services of many volunteer dentists to put the dentures of recruits in order; this action will restore to the list of acceptable recruits many who would otherwise have been rejected. It is hoped now to arrange for dentists to be attached to base hospitals and hospital ships, both in England and abroad. Men in uniform, reservists, and would-be recruits are admitted for free treatment, either by extraction or filling, to the National Dental Hospital in London, where a volunteer corps of dental surgeons and students is at work. It has been considered advisable not to worry the war office for help just yet, as a public spirited benefactor has supplied funds for fillings, and the dental volunteers supply their own hand instruments and engines. As our contemporary remarks, since an army travels on its stomach, it seems well that this organ should be protected by good teeth.—N. Y. Med. Jour.

Foods and Nutrition.—The more recent views as regards the parts played by the different food substances in nutrition are reviewed by L. B. Mendel, of New Haven, Conn. An elementary understanding of the disposal of carbohydrates and fats was earliest acquired as they were the first to have their chemical constitution unraveled. It was not until the work of Carl Voit that the nitrogenous equilibrium of the animal body became understood. To show the changes within the last thirty years in our views of nitrogenous metabolism Mendel quotes from Michael Foster who wrote in 1891, that the greater part of the protein material of the food enters the blood as peptone or in some other form of protein material, and as such was conveyed to the tissues. The latest dictum is quite different. Proteins are now considered to be disintegrated in the digestive tract into the comparatively simple amino-acids which, so far as the nitrogenous transformations are concerned, are now the center of interest. Most, if not all, of these amino-acids are the essentials to satisfy the nutritive needs of the body and some of them are absolutely indispensable for its maintenance and provided they are rendered free and available by the digestive processes, it matters little to the animal body whence they are obtained. Meat, egg proteins and cereal proteins all serve in the same sense and according as they are present or lacking in foods, the body is served. They also serve as culture mediums for bacteria which may yield products of toxic potency. The compounds known under the name of ptomains are doubtless, Mendel says, nothing else than the fragments of amino-acids that have fallen sacrifice to bacteria before they could be absorbed intact into the blood-stream. The knowledge of this fact may help us to avert the serious consequences which may result. The discovery of the amino-acid structure of the proteins also throws light on the phenomena of immunity, the precipitins and anaphylaxis and also indicates a possibility of explanation of the development of special enzymes which are recently being pointed out and utilized in diagnosis, etc. Mendel also takes up the old theories of urea, quoting from Foster and showing that to-day there are many rifts in the veil of mystery surrounding the chemical transformations of food substances in the body that puzzled him. The explanation of certain virtues attributed to certain fats is also, Mendel thinks, nearer at hand, and he points out some of the problems which are yet to be solved and their bearings on malnutrition and disease. In conclusion, he says, that physiology must use not only the sciences of physics and chemistry but its own fruitful experimentation methods on animals and man. None of these procedures can be dispensed with, and the medical profession must insist on conserving for the physiologic sciences the opportunity to continue its studies untrammeled by those who fail to appreciate its motives.—Jour. A. M. A., Sept. 3, 1914.

Radium.—H. A. Kelly and C. F. Burnam, of Baltimore, report their experience with radium in the treatment of uterine hemorrhage and fibroid tumors. Elaborate tables are given of their cases, and they feel sure that radium offers a marvelous means both for the control and for the doing away of uterine hemorrhages in the classes of cases where they have used it, and is also perfectly suited for the cure and disappearance of fibroid tumors. When it fails we still have the operation to fall back on if needed. It is simpler in application than the Roentgen ray and acts less on the ovaries. They insist that the fibroid itself should receive the major radiation in any case and claim that radium can bring about a complete amenorrhea with the absence of menopausal symptoms in half of the cases and with mild symptoms in all of them. They insist on the intra-uterine application in contradistinction to the vaginal or cervical, but think it quite possible that suitable abdominal radiation with radium or the Roentgen ray may add to the rapidity of the results. In their tables they give the amount of radium and the duration of the application, showing wide variation in both. The technic advised is filtration through glass, 0.5 Mm. of platinum; 0.5 Mm. of zinc foil and 0.3 Mm. of rubber. This apparatus, suitably shaped, is carefully introduced directly into the uterine cavity. The time of duration of application seems to have ranged from five to twenty-four hours or a little more. This and the amount of radium used are all stated for each case in the tables.—Jour. A. M. A., Aug. 22, 1914.

Favus and Ringworms of the Nails.—M. H. Foster, of New York, writes that while favus and ringworm of the nails are supposed to be rather rare, the finding of 101 cases among immigrants at Ellis Island during the first eight months of the present fiscal year indicates that these disorders are probably more common, at least among our foreign population, than has been supposed. Clinically, the two disorders are alike. The nails are thick and brittle and sometimes even caseous. It does not seem to be painful or tend to cause an inflammation of surrounding parts. The process is chronic, and if untreated lasts indefinitely. The youngest patient observed was three years old and the oldest seventy-two. Good histories were hard to get, but one patient

said he had had the trouble fifty-two years. While the condition of the nails is highly characteristic, it may be simulated by syphilis, psoriasis, eczema, hypertrophy and atrophy, grave constitutional disorders, etc., but in these cases the whole of the nails are likely to be affected, while in ringworm and favus one or more are apt to escape. A microscopic examination, according to the following method, will make the diagnosis easy and certain: "Several drops of a 20 per cent. solution of potassium hydroxide in water are placed on a slide and a few fine scrapings from the suspected areas dropped in the solution. The slide is moderately heated once or twice and allowed to stand a few minutes. In a little time the suspected material becomes increased in size and soft in consistency. The 'clearing-up' process may be hastened by gently separating and dividing the specimen with an ordinary teasing-needle. Several of the smaller bits of the softened scrapings are then placed on another slide and a drop of the solution of potassium hydroxide added and a cover-slip placed over all. The slip is gently pressed down so as to make a fairly thin preparation. Examined with a 4 eyepiece and a 7-objective with subdued light, the fungi appear as highly refractive, slightly greenish, transparent, branching threads among the partly disintegrated elements of the nail. If properly applied the potassium hydroxide solution clears up and partially dissolves the normal nail material, leaving the fungi standing out distinctly in the field." The organism generally appears as plain hyaline branching threads showing here and there spores, usually not very distinctly. The palms of the hands and the fingers may be affected. The diagnosis between favus and ringworm is not usually easy, but if either disease prevails elsewhere on the patient, it is probably the cause. In the series of 101 cases, eighty-four were ringworm and seventeen favus. About one in five thousand of the immigrants was affected. Foster does not have a very good opinion of medical treatment of these cases. The avulsion of the nail and the application of some germicide to the matrix may be justifiable. On account of the contagiousness and loathsomeness of these two diseases and the special danger when it affects the hands and nails, he thinks it should be put among the class of notifiable diseases, and cases occurring in this country should be so placed as to prevent its spread.—Jour. A. M. A., Aug. 22, 1914.

Special Anesthesia Supplement.—Recent years have been marked by some important contributions to the theory and, especially to the practice of surgical anesthesia, but there has lacked what is now quite needed for the further scientific development of this alongside the other departments of surgery—a journalistic medium and editorial mouthpiece.

The American Journal of Surgery will be expanded to meet this need. Beginning with the October issue and quarterly thereafter, this journal will publish a thirty-two page supplement devoted exclusively to Anesthesia and Analgesia.

This supplement will be a complete journal within a journal containing editorials, contributed articles and communications, abstracts, transactions of Societies and book reviews.

The supplement has been adopted as the official organ of the American Association of Anesthetists and the Scottish Society of Anesthetists, and it will also publish the transactions of other like societies.

The editor of this supplement will be Dr. F. Hoeffer McMechan of Cincinnati, one of the founders of the American Association of Anesthetists and a charter member of the New York Society of Anesthetists.

He will be assisted by a staff of well known specialists in Anesthesia, among whom may be mentioned: J. T. Gwathmey, New York; W. D. Gatch, Indianapolis, Ind.; W. H. De Ford, Des Moines, Ia.; C. K. Teter, Cleveland, O.; E. I. McKesson, Toledo, O.; Isabella C. Herb, Chicago, Ill.; and Yandel Henderson of Yale University.

Suprarenal Virilism.—Nothing need surprise us to-day in the realm of affections due to aberrations of organs of internal secretion. Hardly two years ago we read of the extraordinary power of thyroid extract on a youth with arrested development in no wise cretinoid, the practical outcome having been that he attained the stature demanded for army service. A condition termed suprarenal virilism has been described by Ballez and Tuffier, who recently reported an extraordinary case (abstracted in the Berliner klinische Wochenschrift, July 27) in which an old woman was transformed by visceral disease into the simulacrum of a male. The woman was sixty-two and a sufferer from metrorrhagia (due to supposed fibroid) and diabetes. The latter affection was believed to contraindicate surgical intervention. It showed, however, marked improvement under diet. At this period the woman developed a strong beard and mustache, her face became florid, and the male type of baldness (frontoparietal) began to appear. The voice changed to the masculine type, the muscles began to develop strongly, the clitoris increased in size, measuring four Cm. in length, and a prepuce of corresponding size developed. Years had elapsed since the menopause. The woman now preferred rough manual labor to feminine tasks. Eventually the enlarged uterus was extirpated and found to be the seat of simple hypertrophy only. The adrenals were found to be the seat of fibrolipomatous growths, which were not disturbed.—Med. Record.

The Pineal Gland.—Tumors involving the pineal gland show two sets of symptoms, the nervous disturbances due to pressure, and the metabolic. The latter are referable to disturbances in the internal secretion glands and are most frequently seen in young males. The conception of the pineal gland function has partly been developed from laboratory studies as well as from necropsy records and the assumptions deduced have been that it is in some way connected with holding back too rapid development in childhood. C. P. McCord, of Detroit (Jour. A. M. A., July 18, 1914), gives a report of experiments by feeding young animals with small quantities of pineal gland and recording the weight changes, sexual differences and, in the case of dogs, increased mentality, over control animals maintained in otherwise identical conditions. One hundred and ten guinea-pigs, eighteen puppies, fourteen adult dogs and sixteen chicks have been under observation. The glands used for feeding were washed free of blood and freed of adherent tissue, ground to a fine paste and mixed with milk sugar, then pressed into one-half grain tablets representing each 10 Mg. pineal tissue. They were obtained from cattle at different ages and it was apparent early in the work that the most striking results were obtained from the pineal tissue of young animals. The experiments are described and the results tabu-

lated for each kind of animal. It is observed that some of the changes generally attributed to a deficiency of pineal secretion can be produced by supplying an added amount of pineal substance. McCord suggests two possibilities to account for this: First, this syndrome may appear from disrupting the general endocrinous balance from either increasing or decreasing the amount of pineal secretion available for the body's use. These secondary changes in the other endocrinous glands are now in the course of investigation. Second, the cells of the neoplasm involving the pineal gland may retain some of the metabolic and other functional characteristics of the normal pineal cell from which they were derived, and the peculiar body, sexual and mental changes in patients with such tumors are all manifestations of increased rather than decreased pineal activity. The commonest lesion of the pineal is adenoma and there is abundant evidence that adenoma cells sometimes functionate after the manner of the cells from which they arise and he quotes several authorities to this effect, as well as the observation of Hinds Howell of the similarity of the cells in a pineal tumor to the normal cells of the gland. The results of his study lead McCord to conclude that the administration of minute quantities from young animals to young animals stimulates rapid growth of the body but not beyond normal size. There are also less well-established indications of its producing sexual and mental precocity.

Genito-Urinary Clinics.—Dr. A. L. Wolbarst will conduct a series of genito-urinary clinics every Thursday evening at 8.30 o'clock, at the West Side Dispensary and Hospital of the New York School of Clinical Medicine, 328 West Forty-second street, near Eighth avenue. The clinics will be held from October to April inclusive, and physicians and medical students are cordially invited to attend.

Was Hamlet Gouty?—Sir Johnston Forbes-Robertson is said to be giving us the greatest Hamlet since Booth. The wonderful gifts of the Stratford poet are shown nowhere more brilliantly than in the fact that as each new pathological theory of his temperament comes to light, Hamlet fits it as he did all those which preceded it. A victim of "too, too solid flesh," "fat and scant of breath," Hamlet is to us of to-day obviously a sufferer from the gouty or lithemic diathesis and in grave want of appropriate treatment for the autointoxication caused by too heavy a meat diet and the fermentation of proteins. Hamlet's indecision, his fits of temper, his alternations of humor from an excessive gaiety to the profoundest gloom, fit this new diagnosis like a glove. The picture shows Shakespere's marvelous powers of observation, for the clinical ensemble is perfect, although in the poet's day the Prince would have been adjudged a victim of peccant humors or else as possessed of a devil. Sir Johnston, great player as he is, does not look the part of Hamlet; he is a bilious and saturnine, even if undeniably handsome and impressive figure. Fechter seems to have been the only actor of modern times who fitted Shakespere's description. He was indeed fat and short of breath and he wore a blond wig which gave him some real resemblance to a Dane. Fechter's physical deficiencies interfered sadly with his art toward the close of his career and more than once he was compelled to have the curtain rung down in the middle of some drama on account of a sudden attack of angina pectoris. It is well perhaps for an actor to have the physical characteristics of a rôle he is impersonating, but he must be in full enjoyment of health and strength in order to give a satisfactory rendition. This is why a young man often gives a better and more realistic portrayal of an old man on the stage than any really old man can supply; many modern managers lose sight of this elementary principle and, in their actors give us the physical picture only with but a trace of the art required to produce illusion.—American Medicine.

Public Health Service Examination of Candidates.—Boards of commissioned medical officers will be convened to meet at the Bureau of Public Health Service, Three B street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, Mass., Stapleton, N. Y., Chicago, Ill., St. Louis, Mo., New Orleans, La., and San Francisco, Cal., on Monday, October 19, 1914, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between twenty-three and thirty-two years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than 5 feet 4 inches, nor more than 6 feet 2 inches, in height.

The following is the usual order of the examinations: 1, Physical; 2, Oral; 3, Written; 4, Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate, and that they will serve wherever assigned to duty.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists of examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital.

The examination usually covers a period of about ten days.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

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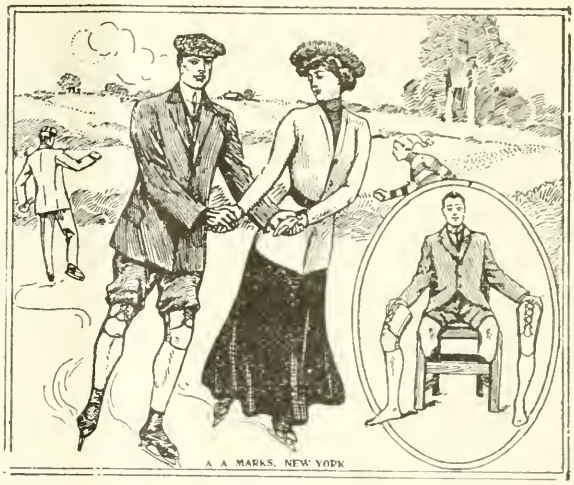

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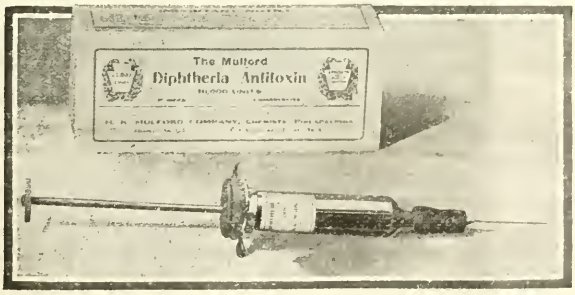

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Miscellany

Now instructive, now amusing—but always interesting and worth reading

Our readers will gain much that may be of great value to them by looking over the advertising pages of this issue. There are a number of very generous offers that may be taken advantage of by merely addressing a post card to the advertiser and mentioning MERCK'S ARCHIVES.

THE DOCTOR OF THE OLD SCHOOL.—But just as the Doctor's horse has passed from common observation, so with him has passed the Doctor of the Old School. By this designation I mean the doctor who knew the insides and outsides of all human beings in the neighborhood or community which he served, and who was implicitly trusted and relied upon by them. The new generation of doctors are efficient it is true, and perhaps kind, but there is more of the commercial in the practice of medicine than of old, more of the expeditious and imperative in spirit and conduct. And there is lacking, in considerable degree, that enduring confidence and sympathy that formerly existed between the family doctor and his people.

Too few these days are persistently loyal to their doctor and stick to him through thick and thin. It may be that neither doctor nor people have suffered by the change, but I cannot but feel that whatever there was in the old relationship that mutually endeared physician and patient was an asset of more than sentimental value, and that the passing of it has been a loss to both.

I like to look at Luke Field's great picture. Like all masterpieces it grows in value and meaning with deeper observation and study. Here the Doctor stands out in high relief, and the strikingly appealing human attributes shine forth from his face and emanate from his personality. Here are depicted sympathy, patience, determination, self-sacrifice. He is the Doctor of the Old School, and we might call him William MacLure or by other names even more familiar to us as we look back in memory and recall visions of other representatives of the type here so faithfully delineated. The artist who gave us this picture made it true to life, true to type. But it is a type that has passed, or at least is passing.—Jour. Kans. Med. Soc.

ARSENIZATION IN YELLOW FEVER.—During the yellow fever epidemic in New Orleans in the summer of 1905 there was for a time much said in the newspapers regarding the use of small doses of arsenic in the prophylaxis and treatment of that disease. A popular experiment on a large scale was made in response to a letter written by Dr. R. B. Leach to a citizen of that town and published in the Times-Democrat of August 3, in which he stated that a dose of 1/100 grain arsenous acid, taken at first three times a day and later once daily, would protect against yellow fever. The publication of this letter was beneficial to the drug trade at least, for it is stated that over 15,000,000 tablets of arsenous acid were sold in New Orleans within a little over three weeks. Whether the results were equally beneficial to the partaking public is a matter of dispute. Dr. White of the Public Health Service, who was in charge of the epidemic, was unable to find evidences of any preventive action, but Dr. Leach contended that it was the wholesale arsenization of the population of the city, rather than the anti-mosquito crusade, that put an end to the epidemic. There the matter rested and the material being exhausted there was no opportunity for further experimentation. Dr. Leach, however, is still convinced of the prophylactic value of arsenic and he has appealed to Congress, in a memorial presented by Senator Sheppard, to pass a resolution requesting the President to appoint a commission to visit communities where yellow fever is in evidence and therein to test the arsenization prophylaxis of yellow fever, so that its value may be proved or disproved incontrovertibly. The theory is based upon the principles of homeopathy, the "symptoms" of arsenic poisoning being similar to those of yellow fever. A year ago the American Institute of Homeopathy suggested to the American Medical Association that a trial be made by a joint committee of the doctrine of similars. The suggestion was courteously received, but we have not heard that it has ever led to any practical results. If Congress should adopt the resolution offered on behalf of Dr. Leach, it would be opportune to appoint one or more homeopathists on the yellow fever commission and thereby a beginning could be made of a joint test of the doctrine of Hahnemann as well as of the theory of Leach.—Med. Record.

MURMEKIASMOSIS AMPHILAPHES.—Under the somewhat imposing name of murmekiasmosis amphilaphes Dr. A. J. Chalmers, director of the Wellcome Research Laboratories, Khartoum, and Dr. J. B. Christopherson, director of the Khartoum and Omdurman Civil Hospitals, describe in a recent number of the Journal of Tropical Medicine a very interesting case of a peculiar form of cutaneous wart characterized by an extraordinary facility for growth causing it to spread and to occupy practically the whole of the right side of the face and neck, involving the external auditory meatus, destroying the right eye, and invading the mucous membranes of the mouth, gums, tongue, and throat. As the most important clinical feature of this apparently new human disease is the warty growths, the authors propose to give it the name of murmekiasmosis amphilaphes, using the term "murmekiasmos" employed by Galen to denote "the breaking out of warts on the body," together with the Greek adjective for "spreading," and adding to Galen's word the termination "is" in order to bring it into accord with modern nomenclature. The patient was an Arab youth, aged 16, and it appears that the warts commenced to show themselves on his face not long after birth. Microscopically the points of interest in the warty masses in this case were the presence of numerous cryptococci, and the fact that the cutaneous warts were largely composed of an adenoma derived from sebaceous glands. A case in England somewhat resembling this in certain respects was published in 1912 by Dr. Lilley in the British Journal of Dermatology under the title of "Notes on a Case of Nævo-carcinoma (Melanotic) of the Scalp of a Boy aged 19," but upon examination the clinical description in this English instance does not agree with that of the Arab youth in the Soudan. It is, however, possible that the two conditions might perhaps be variations of the same disease—i.e., a warty growth associated with a proliferation derived from the sebaceous glands. Dr. Chalmers and Dr. Christopherson have made a considerable

investigation of the literature of the subject without meeting with any reference to any species of cryptococcus associated with warts. In their opinion the cryptococcus found in the Soudan case does not correspond with any of the already named forms, so that taking all the facts of the case into consideration they think they are justified in regarding the organism as a new species, and they propose to call it by the Latinized name of Cryptococcus myrmeciæ, Chalmers and Christopherson, 1914. The warty growths do not appear *per se* to endanger life, but they destroy organs such as the eye, and when they enter the pharynx there is risk of the larynx becoming involved. The only effectual treatment seems to be by means of dissecting operations, leaving large superficial areas to be covered by skin flaps or by skin-grafting. In the early stages, if the diagnosis is established, the condition can easily be cured by operation—that is, before it had extended to the eye or the pharynx. Some time ago some of the warty masses were removed from the face of the Arab youth by operation, and there has been no reappearance of the growths upon the cicatrix. Owing, however, to the dangers involved no removal of the warty masses inside the mouth, on the tongue, or in the pharynx has been attempted.—Lancet, July 18, 1914.

The Food Value of Preserves.—It is reported that an embargo has been laid by the British government on the export of the marmalade and jams for the manufacture of which Great Britain is famous. When properly made, these preserves contain 50 per cent. of pure sugar and have, therefore, a high food value which has only lately been recognized; not only are they a palatable addition to the ration, but sugar is a muscle food and is now known to possess marked energy-producing qualities, as proved by experiments with the ergograph. Sugar is probably not converted directly into fat, but rather spares the body fat and part of that ingested with the food (Hutchison). The jams are undoubtedly being saved for use in the army, where they will be highly appreciated and consumed with advantage.—N. Y. Med. Jour.

Normal Serum in Pruritic Cutaneous Disorders.—Normal serum has given excellent results in skin diseases in the hands of certain observers and has proved inefficient in those of others in corresponding cutaneous disorders. Believing that these contradictory effects were due to the rather complicated methods employed, which include centrifugation, heating, etc., and expose the serum to infection, Charles Fouquet (Journal de médecine interne, 16, 1914) tried normal serum, *i. e.*, serum obtained aseptically from a vein. The coagulum having been allowed to form, the serum was drawn into a sterilized syringe and injected subcutaneously into the gluteal region. At first Fouquet administered but 1 Cc., but found that 5 Cc. every other day gave the best results in adults. The only untoward effect was a slight urticaria in two out of sixty cases.

The results obtained were as follows: In two cases of pemphigus no benefit was procured, the cases finally ending in death. In ten cases of eczema, the pruritus disappeared, sometimes after the first injections, even in cases sufficiently severe to provoke insomnia. The eruption remained uninfluenced, however, in all but two cases. In the pruritus of urticaria, normal serum proved extremely efficient, when associated with appropriate dietetic treatment. In some cases, the first injection caused disappearance of both the pruritus and eruption, but the injections had to be continued to insure lasting results. From five to twelve injections are required, according to the severity of the case. Benefit was also obtained in other forms of pruritus, general or local. In vulvar pruritus, for example, a few injections sufficed to master completely this distressing disorder. On the whole, it was in disorders attended with pruritus that normal autoserum proved of distinct advantage.

That we are dealing with a reaction in which the formation of specific antibodies enhances the hydrolysis of pathogenic wastes or toxins is probable; but be this as it may, the fact remains that the use of normal serum has shown in Fouquet's hands considerable value for the relief of a symptom, pruritus, which often resists all other remedial measures.—N. Y. Med. Jour.

"Impassable" strictures in most instances will be found quite readily passable if the following mode of procedure be adopted: Fill the urethra with olive oil, gently massaging it toward the deep urethra. Then introduce several filiforms, bending the ends of one or two in a bayonet shape, and manipulate with great gentleness until one slips through. Use no force whatsoever, and above all things do not try to pass a steel instrument through a stricture of this type.—Urologic & Cutaneous Review.

Ereuthophobia (Erythrophobia).—Bernhardt implies by this term morbid blushing, or the fear of blushing. Letters are quoted from a patient in which he complains that fear of blushing thwarts all his efforts to make a living and causes him to think of suicide. Aronsohn, one of the authorities on this phenomenon, who has seen many cases, pronounces it an independent affection. It has some connection with sexual life, as it occurs in onanists and the impotent. The author does not accept the sexual as the sole causal element, and insists that a neurasthenic component is present. Von Bechterew, who records himself as advocating the sexual nature of the phobia, mentions a neurasthenic inheritance. Friedlander regards the phenomenon as a mere symptom of neurasthenia. The victims naturally betray this fear in the presence of others. They have the obsession that some one will recognize by their look that they have at one time

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or another committed some immoral or unjust act. Naturally the vasomotor system must be extraordinarily excitable. Alcohol is able to overcome this state, although the patients have been found prone to abuse the remedy. Ever since Casper first described this condition (in 1846) the suicidal tendency has been remarked in certain cases. Imperative concepts were noted in the author's case.—Berl. klin. Woch.

The Therapeutic Uses of Sugar.—Within recent years there has been a growing recognition not only of the dietetic but also of the medicinal value of sugar. As a quickly assimilable nutrient during the exhaustion following severe exertion and during fatigue, sugar constitutes an important article in the dietary of the artisan and of the soldier. Moreover, it has won a distinctive place in therapeutics, particularly in the treatment of shock, of postoperative acidosis, and of cardiac weakness; it has also been extolled as a local application in the treatment of ulcers.

Many observers have proven experimentally that the intravenous injection of a highly concentrated hypertonic solution of glucose causes an immediate and pronounced diuresis by virtue of the dehydration of the body cells, and that the injection of solutions containing from 25 to 33⅓ per cent. of sugar in doses of 15 Gm. to every kilogram of the animal's weight is a safe procedure. E. Enriquez in the Presse Médicale, February 14, 1914, points out that this diuretic action is not the result of any special property of the sugar but is evoked similarly by all hypertonic solutions. Starling has shown that the injection of concentrated solutions of glucose is followed by an increase in the total volume of the blood, resulting from the attraction of water from the tissues, which increase is gauged by the diminution in the percentage of hemoglobin. There are likewise an increase in the arterial pressure and an increase in the volume of the kidney. These three phenomena are accompanied by an augmented urinary outflow.

Fleig first called attention to the feasibility of replacing the ordinary saline solutions by isotonic solutions of glucose, lactose, saccharose, or mannite. These solutions had a strength of about 5 per cent. Furthermore, he demonstrated clinically the diuretic power of hypertonic solutions containing 300 Gm. of sugar per kilogram. Enriquez essayed the use of intravenous injections of such solutions in fifty patients, in some of whom as many as thirty injections were given during the course of their disease. The solutions which were carefully sterilized were injected slowly into a vein at the bend of the elbow, one hour being taken for the injection of 250 to 300 Cc. There was no evidence of any intolerance on the part of the organism: there was, for example, no hemolysis as evidenced by the development of icterus. This benign effect is attributed to the slowness of the injection, and to the rapid transformation of the sugar into glycogen which is deposited in the liver, the muscles, and the myocardium. Under these conditions the proportion of sugar in the blood is kept within normal limits. Only very small quantities of the sugar, 4 or 5 Gm. at the most, pass into the urine, and that within the first two hours following the injection. It is suggested that *a priori* the injection of a large quantity of sugar into the blood of an individual suffering from a hepatic disorder would be followed by an immediate and a marked glycosuria. But actual experience proved otherwise: in two cases of alcoholic cirrhosis with ascites the introduction into the blood of 150 Gm. of sugar at one time caused no more pronounced or persistent glycosuria than that which followed in the average case. Besides, examination of the blood did not show any change in the red blood cells.

The value of intravenous injections of hypertonic solutions of glucose was demonstrated in a large number of cases of infectious diseases in which there was a partial suppression of urine. In these cases a pronounced diuresis was produced. A severe case of carbon-monoxide poisoning was apparently rescued by the use of this measure. Similarly in cases of inanition resulting from stenosis of the esophagus or pylorus, in cases following prolonged anesthesia, in cases of oliguria secondary to cardiac weakness, and in cases of chronic nephritis, the injections of glucose produce good results. The chief value of glucose lies in its tonic action on the heart muscle and in its diuretic power.—Med. Record.

Bear in mind that the most favorable time for operating in prostatic hypertrophy is during the period when the only symptoms are due to a congestion of the prostatic mucosa. At this time the prominent symptoms will be frequency at night, hesitancy of a slight degree, diminution of stream and a moderate quantity of residual urine. The dangerous sequelae follow this stage. —Urologic & Cutaneous Review.

Doctors and the Death Penalty.—Not long ago a popular writer suggested that "death at the hands of the law should be regarded as a major scientific operation and as such entrusted to the medical officer." In some Scandinavian countries the office of surgeon and executioner were occasionally combined, and in our own country doctors have given attention to the best means of helping malefactors to shuffle off this mortal coil by studying the right length of drop required for the purpose and the most effective way of adjusting the noose. In France the instrument with which the capital sentence is carried out, though not invented by Dr. Guillotin, was brought into use again and perfected by him just before the Revolution in which it played so terrible a part. It is often said that he himself was a victim of the guillotine, but this is not true; he died a natural death on March 26, 1814. In these days of centenaries he escaped commemoration, and this is just as he would have wished, for though he introduced the instrument from motives of humanity, he was not proud of having his name attached to it. A rough form of guillotine had been in use in Italy since the thirteenth century, and was employed in Germany in the Middle Ages and in Scotland and England in the sixteenth and seventeenth centuries. For a hundred years or more it had fallen into disuse, and, according to the "Encyclopaedia Britannica," Guillotin got his information about the apparatus from the description of an execution that took place at Milan in 1702, contained in an anonymous work, entitled "Voyage historique et politique de Suisse, d'Italie et d'Allemagne." In an article published in the "Progrès Médical" of April 25th an account of the introduction of the guillotine is given. In 1789, when Guillotin brought forward his proposal, there were two methods of execution—hanging, which was a degrading punishment, and beheading, which was reserved for State criminals and did not dishonor the family. Guillotin's object was to do away with this inequality, and accordingly he proposed that crimes should be punished in the same way, whatever might be the rank of the culprit. He gave a vivid description of the horrible methods

of execution "devised by a barbarous feudalism" —the gibbet, the scaffold, the wheel, and the stake—and concluded by proposing decapitation as a uniform method of punishment, mitigating it as far as possible by means of the instrument which bears his name. There was an animated discussion, Guillotin's proposal being strongly opposed by the Abbé Maury, who prophetically pointed out that it would be dangerous to accustom people to the sight of blood. Nevertheless, the proposal was adopted, and Guillotin's name became immortal in a manner by no means to his taste. A ballad of the day celebrates him as follows:

Guillotin
Médecin
Politique
Imagine, un beau matin
Que pendre est inhumain
Et peu patriotique!

And so on. The ballad describes the machine and names it:

La machine
Qui simplement nous tuera
Et que l'on appellera
Guillotine!

But it was not till two and a half years later that, after further discussion, the guillotine came into use. Before it was finally adopted Antoine Louis, general secretary of the Academy of Surgery, was consulted. His answer, which dealt in an exhaustive manner with the construction of the machine, was read on March 20, 1792. It was proposed to call the instrument "louisette," after him, but the name "guillotine" stuck to it, to the despair of its unwilling sponsor, who for the rest of his life tried to sink himself into oblivion. The first criminal executed with the guillotine was one Nicolas Jacques Pelletier, who "suffered" on April 25, 1792, for a highway robbery. The guillotine began its awful career as a "precautionary measure" against enemies of the Republic on August 10th in the same year.—Brit. Med. Jour.

Before resorting to cystotomy or even curettage through the urethra (in women) in phosphatic encrustations complicating cystitis—employ copious irrigations of acidulated solutions, and render the urine hyperacid with benzoate of ammonium.—Urologic & Cutaneous Review.

An Original Remedy.—The spittle of the sperm-whale—spare yourself the trouble of looking it up in European pharmacopœias; you will not find it. It is in the far East, principally in Tonquin, under the name of *Long-Duyen-Huong*, that this spittle is used, mainly as a remedy in asthma. We gather this from a recent article by M. Charles LeClére, consulting physician at Montdore.

When a whale is stranded or killed, he says, the natives carefully collect the salivary secretion. This air-dried saliva is a gray viscid substance of slight elasticity. The taste is said to be somewhat bitter, and it is taken in doses of from fifteen to thirty grains a day. Cut into bits it is administered in any decoction or in water flavored with lemon. Mr. LeClére cites the case of a missionary priest, who, having formerly taken potassium iodid for his asthmatic attacks, made a trial of *Long-Duyen-Huong*. He took fifteen grains a day and obtained the same relief in four days that a course of iodid had taken fifteen days to give.

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The author of this curious paper tried the remedy in the case of a peasant and secured a remarkable result without, in the least, disturbing the patient's extremely sensitive stomach. Later, the remedy growing scarce, he was obliged again to put his patient on the iodid; but the stomach became disturbed, the appetite was lost and the results proved much less satisfactory. It seems, therefore, that *Long-Duyen-Huong* is a valuable succedaneum to the iodids, and M. LeClére gives us the reason. In all species of animals the saliva is an important excretion. It is evident that the whale, immersed in a medium like the sea, containing large amounts of potassium and of iodin, must absorb a considerable quantity of these substances. The saliva becomes charged with them, and those who take this dried spittle are, in fact, absorbing iodid of potassium. The activity of the medicament must be ascribed to the large proportion of the iodid it contains. Doubtless, there are other active constituents; for this natural substance is probably of a highly complex composition. The iodids are, however, almost certainly the important constituents, and the efficacy of the drug in relieving asthma, in which the iodids are almost our sole resource, tends to strengthen this logical conclusion. Besides its therapeutic value, *Long-Duyen-Huong* possesses another remarkable virtue in its perfect tolerance by the human organism. Its superiority in this regard to the metallic salts is readily understood. In the whale's saliva we have every reason to believe the iodides to be in organic combinations. The mineral salts are much less readily assimilable than our foreign organic remedy, and therefore act less happily in the animal economy.—Le Monde Médicale.

Chronic Bronchial and Pulmonary Affections.—There is a considerable number of chronic bronchial and pulmonary disorders in which the administration of iodine in some form would prove serviceable. Thus in chronic bronchitis and pleurisy, in conjunction with the syrup of iodide of iron the iodide of potash will prove of benefit. An excellent means of exhibiting the iodides in such cases is offered by Iodia (Battle.) This preparation will also prove of advantage in other pulmonary or bronchial disorders in which an indication for iodine may exist. A point of superiority in Iodia is its palatability and the case with which it is tolerated over long periods. (Battle & Co., St. Louis, Mo.)

Femina Militans.—The British suffragette is naturally receiving attention at the hands of medical jurists in other countries, and last June she was discussed before the Medico-Legal Society of Berlin. The phenomenon of militantism, said Marx, is an inversion of the seemingly natural passivity of woman, and is due to a certain immaturity of the brain, which is exhibited in the violent "short cut" toward a desired object. Violence has been termed the weapon of the weak. We are reminded in this connection of the young men of Greece, of whom the philosophers said that young men "use the harshest measures first." Marx absolves the women from hysteria. In passing he mentions other types of femina militans, in which the natural passivity of the sex is inverted, and women have revolted against what they believed to be a withholding of their rights, but in the modern type it is the ballot alone which is sought. In fixing punishment, each militant, Marx says, should be dealt with as an individual, and no wholesale penalties be carried out. Leppmann would not class the suffragettes indiscriminately as criminals. He would look into the components of imbecility and psychic infantilism. Strassmann classed the suffragette movement as a "crowd psychosis." Mass believed that no sane woman could die by hunger strike. Marx in closing said that the movement was a pathological development of neofeminism. The question of feminine militancy is now, however, for the time being at least, a thing of the past, overshadowed by the militancy of hordes of the ruder sex. The woman has resumed her rôle of ministering angel and is devoting her energies to relieving as far as she may the suffering caused by the combatants in the larger war.—Med. Record.

Old Blue Laws of New Haven.—No one shall be a free man or have a vote unless he is converted and a member of one of the churches allowed in the dominion.

No dissenter from the essential worship of this dominion shall be allowed a vote for electing of magistrates or any officer.

No food or lodging shall be offered to a heretic.

No one shall cross a river on the Sabbath day but authorized clergymen.

No one shall travel, cook victuals, make beds, sweep houses, cut hair or shave on the Sabbath day.

No one shall kiss his or her children on the Sabbath or feasting days.

The Sabbath day shall begin at sunset, Saturday.

Whoever wears clothes trimmed with gold, silver or bone lace above one shilling per yard shall be presented by the grand jurors and the selectmen shall tax the estate 300 pounds sterling ($1,500).

Whoever brings cards or dice into the dominion shall pay a fine of 5 pounds sterling ($25).

No one shall eat mince pies, dance, play cards, or play any instrument of music except the drum, trumpet or jewsharp.

No man shall court a maid in person or by letter, without obtaining the consent of her parents. Five pounds penalty for first offense, 10 pounds penalty for second offense, and for third offense, imprisonment during the pleasure of the court.—Exchange.

Salt.—Sodium chloride is a very necessary article of food. One of the greatest tortures is to be deprived of this mineral. In China, it is reported, that criminals are often deprived of salt and suffer intensely until death relieves their sufferings. Salt was unknown and unattainable to primitive man. Later it was considered a great luxury and only used by the rich. Homer calls salt "divine." Plato says it is a "substance dear to the gods." Covenants, sacrifices, prayers of special import required salt to solemnize the occasion as a "covenant of salt" (*Numbers*, xviii:19). Bonds of piety and friendship were celebrated by the Arab phrase "there is salt between us." "To eat the salt of the palace."—(*Ezra* iv:14).

In Roman times an allowance of salt was made to officers and men. In imperial times this *Salarium* became an allowance of money for salt or salary. "Before you make a friend eat a bushel of salt with him."—Herbert, *Jacula Prudendum*. Salt springs were regarded as a special gift of the gods. The Lord tells His disciples: "Ye are the salt of the earth."—*Mathew*, v:13. "His wife looked back from behind him, and she became a pillar of salt."—*Genesis*, xix:26.

Spilling salt was held to be an unlucky omen by the Romans, and the superstition has descended to ourselves. In the famous painting of Leonarda da Vinci's "Last Supper," Judas Iscariot is known by the saltcellar knocked over accidentally by his arm. Salt was used at sacrifice by the Jews, as well as by the Greeks and Romans. It is still used in baptism by the Roman Catholic clergy. It was an emblem of purity and the sanctifying influence of a holy life on others. *True to his salt.* True to his employer. *Cum grano salis*, with its grain of salt or truth.

Salt streams, salt springs, salt mines, salt workings and sea evaporations have been for centuries important governmental perquisites. Most countries have important salt workings and so we found it in Germany where an import duty of salt is fifty cents on one hundred pounds. There is also an export duty so that the government makes an income both going and coming. The United States produces more salt annually than any other country twice over and sells it without any kind of duty.—Pacific Med. Jour.

Nervous Instability.—Few agents at the physician's command for employment in nervous disorders serve such a satisfying purpose as does PASADYNE (Daniel) in unstable states of the nervous system.

Its value in this direction lies in its marked soothing properties, a value which must be emphasized when it is recalled that no evil effects follow the use of PASADYNE. Its administration brings about an early relief of highly nervous states.

A sample bottle may be had by addressing the Laboratory of John B. Daniel, 34 Wall St., Atlanta, Ga.

The organic compounds of sulphur are often better tolerated in cases of acne than the inorganic.—Urologic Review.

A New Phase of the Marriage War in Wisconsin.—It never seems to have occurred to the particular kind of idiot who framed the Wisconsin "eugenic" law, and thereby discredited the science of eugenics in the popular mind, that if you made the marriage ceremony difficult or otherwise disagreeable to the people at large that men and women would, nevertheless, continue to come together, live together, and have children in orderly and respectable families, notwithstanding the ordinary forms of the law. Such a state of affairs was seen in Cuba before American intervention, when the cost of the necessary civil and religious ceremonies made marriage a luxury to the poorer classes of the island.

We now see that Milwaukee has devised a simple and ingenious way of beating the monstrosity forced through the legislature by a handful of women who tangled up two such separate subjects as eugenics and the control of venereal diseases. By this plan the couple intending marriage appears before the recorder of deeds of the county. "Here," says the Milwaukee News, "the couples can record their common-law marriage contracts without going through any formality or bowing to any convention. No license, no health certificate, no minister. All that is needed is the consent of the girl. A contract, and the thing is done."

And the well-meaning, simple-minded, ill-informed people who are responsible for the law have exposed the State—and with the State the girls of the State and the future generations of the State—to a greater danger than existed before. Wisconsin, and all other States for that matter, had better stop fooling with freak marriage laws and with freak ways of getting married, and set themselves earnestly to work seeing that the young people are adequately instructed in all essential things necessary to a sane and healthy conduct of the marriage state.—Lancet-Clinic.

Bearded Women.—Tuffier lately showed before the Paris Academy of Medicine the case of a sixty-two-year-old woman who was normal until the menopause when she underwent a complete change sexophysically and in sexual characteristics with a marked approximation to the type of the other sex. She developed a bushy black beard and moustache. Her complexion was florid and her eyes slightly exophthalmic. The hair was shed in part but showed a frontoparietal baldness which is generally considered to be peculiar to man. The timbre of the voice was frankly masculine. With regard to the genital organs there was some hypertrophy, though not very marked, of the clitoris though this measured an inch and two-thirds in length and was surrounded by a well developed prepuce.

At the same time her habits underwent a change. She no longer cared for anything but masculine occupations, she did spade work, wielded the pickaxe and gardened for all the world like an agricultural laborer, in fact, everything pointed to profound sexual changes.

She came into the hospital, however, for an affection peculiar to women, the principal symptoms being copious metrorrhagia. On examination she was found to have a large fibroid which no doubt was the cause of her troubles. At the same time she was diabetic and the treatment of the glycosuria delayed surgical intervention for some weeks.

The operation proved a surprise in more than one way to the surgeon. To begin with, when he had performed laparotomy he found not a fibroid but a uterus formed of muscular bands analogous to those met with in the parturient state, the size of a foetal head. This was dealt with by subtotal hysterectomy which was recovered from without any difficulty. Even the glycosuria disappeared after the operation. Tuffier, in exploring the suprarenal region in the course of the laparotomy, came upon a bilateral mass overhanging the kidneys and apparently of fibrolipomatous nature. The left ovary was atrophic, the right presented a growth the size of a big walnut.

Viewed as a whole, he remarks these features correspond to the suprarenal virilism described by Apert, Gilbert, Ballet and Gallais. It was a case of hyperfunction of the suprarenals and this exerts a different influence according to the age of the subject. In children in whom the preceding observers have studied it more particularly, it stimulates growth both in degree and rapidity in an incredible manner. In adults and after the menopause it may give rise to changes in a woman who was previously quite normally constituted. As a rule the two principal signs are hypertrichosis and hypertrophy of the genital organs.

Dr. Tuffier concluded as follows: "We must carefully place on record all cases of this kind but we must be on our guard against jumping to any conclusions as to the physiology of the endocrinous glands, for their functional relationship and their influence are so many, as yet, unsolved problems. Surgery, in dealing with these glands, should contribute a particularly

valuable stone to the edifice. On the other hand the signs of virilism should lead us to suspect the possibility of a suprarenal tumor which, if discovered early, can be effectually dealth with."—Urologic & Cutaneous Review.

BEWARE OF AN INTRACTABLE CASE of eczema with pruritus in an adult, especially if accompanied by slight bronzing of the skin. It may be an early case of mycosis fungoides.—Urologic Review.

THE VALUE OF HEALTH IN INDUSTRY AND WAR. —There is food for reflection in the fact that the exigencies of commerce, the advantageous pursuit of industrial operations, and even the preparation for real or anticipated war may promptly bring about hygienic reforms which wide-spread preaching and earnest exhortation are at best slow in promoting. The "safety first" slogan which one hears in nearly every city of the United States at the present time is one aspect of a movement to increase the personal welfare of the individual by decreasing the liability to injury through the carelessness of a fellowman. The same spirit crops out in the "ten trade commandments" of the worker which are posted conspicuously here and there in factories where personal injuries and loss of life furnish unfortunate and—let it be frankly added—unprofitable incidents in the conduct of manufacturing operations. The remainder "thou shalt not" gains added force when its value is expressed in terms of practice and daily experience rather than in the more vague language of ethical considerations. And accordingly there is a telling force in such direct admonitions as the following, which we quote from a recent compilation for use in a factory:

"Thou shalt take no unnecessary risks, nor try to show off, nor play practical jokes, for by thy carelessness thou mayest do injury which will have effect unto the third and fourth generations to follow.

"Remember thou art not the only one on the job, and that other lives are just as important as thine own.

"Thou shalt not throw matches or greasy waste on the floor, as a dirty worker is a clumsy worker, and a clumsy worker is a menace to his fellow-workers."

These and similar timely suggestions, put in a form that is sure to attract notice, cannot fail to promote the mutual and reciprocal interest of the employer and the employed. Modern hygiene and preventive medicine have recognized long ago that the individual can no longer claim a liberty in his actions, independent of his neighbor. Our provisions for quarantine, vaccination against small-pox, and diverse other regulations in the interest of the public health have, in the past, been enforced only with the annoyance that comes from lack of co-operation and from personal resentments together with the indifference for restrictive rules that is bred in a community of "free" people. Yet now we see, in the combined enterprise and altruism of modern employers, protective devices put in operation to secure, without friction or resentment, the same sort of welfare results that the federal government or state or municipality would find difficulty in getting under way.

That the unexpected situations created by war have, in the past, furnished the stimulus for new inventions and useful processes is too well known to require detailed comment. It would appear in the present situation that the war against universal peace may actually be a war against intemperance. The armies and navies of to-day represent the most efficient fighting forces that the nations can command. No device, no agency that will contribute to their power and preparedness, is willingly neglected. Health is a prime consideration in this respect. Field Marshal Earl Kitchener is reported to have counseled the English soldiers to abstain from drinking while abroad, reminding them that their duty cannot be done unless health is preserved. The men were cautioned to keep constantly on guard against excesses. The German Emperor is said to have forbidden the "treating" of the soldiers in his armies. The sale of absinthe, imported by French soldiers in an earlier war, when alcohol was used to fight fever, has been restricted in Paris.

It is of slight consequence whether or not these rumors are entirely correct. They represent the current tendencies, which are undeniable by anyone who has watched the recent decisions of American naval authorities in the face of not a little apparently adverse criticism couched in the usual phrases concerning personal liberty. The truth is, that "the relation of alcohol and fighting has been squarely met, and the fact admitted that they are not compatible." A recent editorial writer has expressed this by saying that a temperate army was something not conceived of in the old theories of war; but a drunkard is to-day as much out of place in an army as he would be on a battleship. As every great conflict, whether of church or state, of labor or commerce, has brought out some permanent good, however clouded it may temporarily have been by the major issues at stake, so the horrible strife which the world is now experiencing may actually be developing a war against intemperance—a permanent advantage of no mean proportions.—Jour. A. M. A.

NEVER PRONOUNCE a single bald patch on the head of a child to be ringworm unless positive evidence, clinical or microscopical, exists in the shape of infected hair.—Urologic Review.

FINGER-PRINT IDENTIFICATION OF THE DEAD. —One of the horrors of war may be to some extent done away with by the discovery of Dr. Allie W. Williams, of the United States Army (military surgeon, July, 1914), that the bodies of two soldiers, otherwise unrecognizable, were identifiable by means of the finger prints. As Doctor Williams remarks, this method of identification, so valuable in the detection of deserters who reenlist in the service, could well be extended to a marked degree of usefulness in the establishment of identity of the unknown dead on the field of battle. Finger prints being required of both officers and men would likewise tend to the effacement of the stigma attaching to the system in the minds of the men, as being a part of the Bertillon system used for the detection of criminals.

The hands were obtained by excising at the wrist joint, and the specimens were prepared by soaking over night in 2 per cent. formaldehyde solution. On the following morning, examination of the finger-tips with a magnifying glass, although the epidermis had been completely shed during the prolonged exposure of the body to the elements, showed that the lines were still visible on the true skin. The next consideration—a very puzzling one—was how to make an impression of those delicate lines necessary for mailing to the adjutant general's office at Washington. The skin was in such an advanced state of decomposition that it was not considered advisable to inject the skin and round out the

shrunken finger-tips and thus secure rolled impressions with printer's ink on paper. So at the suggestion of Acting Dental Surgeon Rice, a thin sheet of gutta percha, such as is used by dentists for impression work, was obtained from his office. By warming this material with the aid of a spirit lamp, perfect moulds of the ends of the fingers were made by pressing the gutta percha tissue well down into the depressions caused by the shrinking of the skin. The magnifying glass showed that the gutta percha moulds exhibited quite satisfactorily imprints of the remaining and partially obliterated lines. These gutta percha moulds were forwarded, February 13, 1914, to the adjutant general of the army; on February 17th, the identity of the man was established.—N. Y. Med. Jour.

Too long an application of tar in the shape of ointments or lotions may lead to a troublesome folliculitis, especially upon the lower extremities. —Urologic Review.

Cheilitis Exfoliativa.—The condition of chronic scaliness of the lips accompanied by more or less inflammation, known as cheilitis exfoliativa, is by no means common. Three cases are described by H. K. Gaskill, of Philadelphia, two of which were in males, age fifty-six and twenty, respectively, while the third was in a married woman, aged thirty-two. Two of the cases appeared to be associated with seborrhea, as there were other evidences of that disease present at the same time, but the third patient had no other cutaneous eruption.

Traumatism is said to be an important factor in some cases of this variety of cheilitis, and in the elder male patient it was elicited that he was "constantly biting and picking at his lips." None of the patients was addicted to smoking. In one case it is reported that the lips were much swollen and that the scales would peel off in large shreds. Itching was not a marked feature, but a distinct burning sensation in the lips was complained of by the female patient. Induration was not felt and there was little or no moisture. Most authors regard the condition as being associated with seborrheic-dermatitis. It is not stated whether any cultures were taken in either of the cases. The author quotes a case shown by Trimble, as cheilitis exfoliativa in which vesicles were present arising from a sharply defined erythematous base, and he regards this as of a different type from his three cases. The treatment, unfortunately, is unsatisfactory.—Urologic & Cutaneous Review, Sept., 1914.

Many cases of so-called eczema of the fingers and toes are in reality due to a variety of ringworm fungus.—Urologic Review.

Red and White Meat.—The irritating action of the extractives of meat during excretion by the kidneys is well known and has been the basis of a rule of treatment limiting the use of these products and the meats containing them to a minimum in the treatment of parenchymatous and interstitial nephritis. Because certain red meats contained a large amount of extractives, the rule to exclude red meats and permit white meats and fish gained currency. More recently it has been shown that some white meats contain a high percentage of extractives, so that the chemical composition of the two varieties of meat does not differ sufficiently to justify a marked preference for the white meat over the red. On the other hand, there are those who still assert that the objection to red meats as opposed to white is well founded. Thus McCrae in Osler's "Modern Medicine" says "All kinds of meats contain extractives, and the so-called dark meats to a greater extent than the light meats. Adler," McCrae says, "in a review of the subject, concludes that the prevalent idea that the subject of renal disease ought to eat light rather than dark meats is correct, and that these meats boiled contain the harmful factors less than when roasted." The fact is that the color is an insufficient criterion. The objection to extractives as irritating to the kidneys is quite correct and the important point is to determine for each kind of meat whether it contains a sufficient amount of the extractives to be injurious. The question thus seems to be reopened. Kindborg, in the chapter of his text-book dealing with this subject, concludes that the old distinction between red and white meats cannot be sustained. He founds his recommendations for the use of meat in nephritis on the comparative amount of extractives in the individual sorts of animal food. Thus some sorts of fish are higher in extractives than most kinds of meat and their effect on the kidneys must be judged accordingly.—Jour. A. M. A.

Some authors maintain that a suddenly developing varicocele is highly significant of renal tumor.—Urologic Review.

The Doctor and His Horse.—The classic portrayals of the Doctor usually show him on or behind a venerable or unimpeachable horse, plodding his tedious way through wind and weather. Or perhaps the picture shows him leaving the faithful steed at the gate and hurriedly seeking access to the house of suffering. Even in Luke Field's well-known picture, "The Doctor," found on so many walls, one can feel very certain that the rugged figure arrived on horseback, and that the faithful beast is patiently waiting for him just outside.

But nowadays the Doctor has no such companion on his rounds. If disposed to soliloquize along the road his monologue now seldom falls on an appreciative equine ear. If he would have an objective to which to address his musings, he must be content with such ears as may be found under the steel bonnet of his motor car. I fear that little sympathy is found there with such converse as Dr. Weelum MacLure was wont to hold with his faithful Jess: "It'll take ye a' yir time, lass—but ye never failed me yet, and a wumman's life is hangin' on the crossin'."

I do not pretend that the successor to the Doctor's horse does not elicit or even invite occasional deliverances from him. I have known physicians of my acquaintance to even dismount in order to more intimately address themselves to their motors, which in turn seemed attentively to pause the more appreciatively to listen. But I am sorry to note that the tone of address at such times was scarcely confidential, nor were the terms employed to be considered endearing, but rather ejaculatory and imprecative.—Jour. Kans. Med. Soc.

Hyperesthesia of the posterior urethra is best treated by topical applications of 5 or 10 per cent. solutions of nitrate of silver. Stronger solutions at fortnightly intervals are more effective than weaker solutions used more frequently.—Urologic & Cutaneous Review.

GOLF BALLS: A WARNING.—The structure of a golf ball does not as a rule attract the interest of the player; his only concern about it is that its composition shall be durable and such as may possibly add to the flight of the tee shot, and that it shall be true on the green. The ball may possess a power for harm of which he is not aware, but which he certainly should be on his guard against in view of a distressing accident which befell a golfer a short while ago. The pathological circumstances of the case are noted by W. H. Jessop. Some curiosity having been expressed as to the composition of a certain ball, a serious attempt to satisfy this was begun by stripping the ball of its cover and of its tight rubber bandaging beneath. All went well until the inner liquid core was apparently pierced in the endeavor probably to get rapidly at the mystery of the center. There was suddenly set free a semi-fluid mass, which came out with such force as to be projected on the ceiling. Unfortunately, some of this mass struck the dissector sharply in the eye, which resulted in a serious injury, the surgeon to whom the patient came at first believing that irreparable mischief had been done, with a prospect possibly of the power of sight being forever destroyed. We are glad to learn, however, that the outlook is since more favorable, and that eventually the sight and the injured tissue may be restored. The possibility of a golf ball behaving thus may not be generally known, and in ordinary circumstances would never be discovered, but nevertheless some protection is needed, we think, against this concealed danger. In the present instance it was curiosity as to the structure of the ball which led to the accident. The fate of a golf ball no longer good for golf, perhaps because it has lost its true shape or because it has become freely hacked, is likely enough to be the unwinding of its ingeniously wound rubber binding. The ball is, of course, not sold for this purpose, but there are directions now in which the good resilient qualities of the very superior rubber used in a golf ball can be turned to good account and the discarded ball may be selected as a source of this material. It ought to be known that the attempt to recover rubber in this way may be followed with disaster, and we consider that some warning should be issued with those golf balls which contain an inner liquid core of caustic consistency, subjected to the considerable pressure of its tight elastic envelope. As it is, no such warning is issued, though there may exist in the ball all the potentialities of a bomb if it is not carefully handled. Some experiments which we have made with such a ball show that the pressure exists only so long as the liquid core is held tight in the grip of its tense rubber binding. At this stage, if the liquid core is pricked by a sharp instrument, the contents are ejected with great force. If, however, the elastic binding is gradually released or unwound, the liquid core, we find, is disclosed at its full size, having had its pressure gradually relaxed, and the little bag of fluid is then practically incapable of discharging its contents. The bag of fluid, in our examination of balls of similar make to the one with which the accident occurred, consists of a little rubber bottle or flask containing a semi-fluid mass of soft soap or potash soap. The rubber bottle is closed at its neck by means of tightly bound string. Leakage is possible at this point, so that the contents may be discharged without the intervention of a sharp instrument. The potash soap we examined was very strongly alkaline, and no doubt would act as a corrosive in much the same way as free caustic alkali. Most people are aware of the exquisite pain which even soap made for toilet purposes gives when inadvertently the lather gets into the eye. When this happens with a strong, coarse alkaline potash soap used for common scouring purposes it may easily be imagined how intensified the action can be. But in the instance quoted the potash soap was also a projectile which came into contact with the sensitive tissue of the eye with great force. We think that makers of such balls should issue a caution in regard to the dangers of the liquid core existing under the great pressure of the tight rubber folds. For the sake of children who may get possession of old golf balls, we think that it should be widely known that to experiment with the structure of certain varieties is attended with grave risks.—Lancet.

AN EXCITER OF COUGHS AND COLDS.—Kruss believes that the various microorganisms which are apparently capable of setting up acute rhinitis cannot explain certain phases of the latter. In certain cases pathogenic bacteria may be found in the nasal mucus in such small quantities that they cannot be regarded as responsible. This, in fact, is rather the rule than the exception, and in turn tends to throw doubt upon the contention that an ordinary cold is due to the various germs at present accused, as the *Micrococcus catarrhalis*, the influenza bacillus, etc. A simpler and more probable view is that a cold is due to some ultra-microscopic filtrable virus, for during the past twenty years about that number of diseases has been brought etiologically under this head. The writer filtered some nasal secretions of a patient with a cold through a Berkefeld filter and inoculated a considerable number of individuals with the filtrate. In from one to three

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days all had developed colds. The disease was then propagated through other series. The filtrates were sterile as far as our known germ life is concerned. The invisible offender, thought to be a protozoon, he regards as responsible for most of our colds.—Muench. med. Woch.

Amebas and Pyorrhea Alveolaris.—Smith and Barrett have made a somewhat startling announcement with respect to pyorrhea. They have found amebas present in scrapings from the pyorrhea pockets in about fifty cases, while in the gum margins of persons free from pyorrhea alveolaris they have discovered no such organism. The results of some therapeutic trials have been so distinctly encouraging that the authors decided to present a preliminary report in order that their findings may be further investigated by others. Having in mind the amebicidal action of emetine hydrochloride in amebic dysentery and abscess of the liver, the effect of this drug was tested in the patients under observation. No other treatment was instituted; the roots of the teeth were not even scaled. A 0.5 per cent. solution of emetine hydrochloride was injected locally into the apical pocket, filling it with the fluid as the syringe needle was withdrawn. This treatment was carried out every day or every other day. The improvement in the patient was marked; suppuration ceased and the gums rapidly assumed a healthy appearance; and there was simultaneous improvement in systemic symptoms. The authors suggest that even if amebas are not the sole cause, they may exercise the function of conveying bacteria to the diseased tissues. If this is the case, one may permit one's imagination to wander throughout the whole gamut of infections and dream about the possibilities of animal parasites as factors in other infections, especially in the carrier state. We lack an explanation of the fact that the chronic intoxications accompanying pyorrhea alveolaris may be rapidly improved by the administration of appropriate bacterial vaccines, but local conditions must receive local treatment. May it be that the amebas release the bacterial poisons, while protecting a sufficient number of bacteria to continue the infection?—N. Y. Med. Jour.

Alkaloids in the Endocrinous Glands.—Carl Wiesand Rose announces that he has perfected a method by which he has been able to isolate one or more alkaloids from each of the several glands of internal secretion. In this preliminary report he does not state his methods of isolation or the chemical identification of the several alkaloids, although he states that large amounts of these bodies can be obtained from certain glands. In several cases alkaloids obtained from different glands exerted similar physiological actions. Often a single alkaloid failed to exert the desired action, but a combination of two or more was found to give the expected results. From the pancreas, alkaloids were obtained which produced a relative leucocytosis, which lowered the blood pressure, which increased the solubility of uric acid, caused diuresis, and had a marked effect on the metabolism of sugar. It was possible to prevent entirely the excretion of sugar in a depancreatized dog by the administration of the alkaloid obtained from beef pancreas, and four diabetic patients who could not be made free from sugar by diet were rendered so by administration of this alkaloid. In them, also, the sugar tolerance was materially increased so that for weeks they could take much larger amount of carbohydrate than before without the reappearance of glycosuria. Three of the cases have remained free from sugar for four months. The thyroid yielded an alkaloid which caused lymphocytosis. The thymus also contained a body which caused a relative lymphocytosis, one which produced a relative leucocytosis, and another which increased the formation of bone in young animals. The anterior lobe of the hypophysis contained bodies which increased bone formation, and another which diminished or prevented urine secretion. The tests and ovaries also caused relative leucocytosis, and through administration of a combination of substances from the thymus, pancreas, and genital glands, the symptoms were markedly improved in two cases of exophthalmic goitre. Other alkaloids from the genital glands inhibited the growth of young animals.—Berl. klin. Woch. per Med. Times.

The Punishment Fit the Crime.—In the year 1481 Jacques de Tourzel, Sieur d'Alegree decreed the following punishments for adulteration and other sins against pure food.

"Any man or woman who sells watered milk shall have a funnel thrust into his or her mouth and be compelled to drink as much watered milk as in the judgment of the surgeon can be borne without danger to life. Any man or women who sells butter mixed with beets, stones, or other objects with the object of increasing the weight, shall be arrested and put in our pillory. Then the butter shall be placed upon his or her head and there remain until it shall have been melted by the heat of the sun. The dogs shall be allowed to lick them, and the people may scold them with any words its pleases them, provided that neither God, the King, nor any other persons be thereby libeled. If the weather is cold a fire shall be built in front of the guilty one. Any man or woman who sells rotten eggs shall be bound to the pillory and the street urchins shall be given the rotten eggs, that they may therewith pelt the offender, to the amusement of the people, but it shall be forbidden to throw at them any other object than rotten eggs."—Exchange.

Localization of Motor and Speech Centers.—E. Dupuy states that lesions of both hemispheres in almost the same ratio cause paralysis on the opposite side of the body. In the first 600 cases of hemiplegia which the author has collected, 260 showed lesions in the right hemisphere, from which fact he concludes that there is no difference in the functions of the two halves of the brain. Numerous operations performed by surgeons to remove the cause of convulsions or contractures, show that the so-called motor centers for the arm, for instance, or the hand having been removed, not only the convulsion or the contracture disappeared, but no paralysis ensued. Seven years ago Marie tried to show that aphasia is composed of different conditions—one the loss of power of pronouncing words, and the other the loss of comprehension and understanding, or sensory aphasia, so-called. He endeavored to establish the seat of the real lesion of aphasia in that part of the temporoparietal lobe which he defined in a quadrilateral space, including Wernicke's convolution and deeper parts. The author offers the explanation which he believes is the rational one of the mechanism of symptoms in brain lesions. He states that the conception of the seat of definite function, as the doctrine universally adopted will have it, is erroneous. In the light of the examples which he has reported it appears that there are no supplemental centers, but that the entire cortex is endowed with the faculty of acting in specific

and differentiated manner, and that at most disease or destruction of a given area brings on motor paralysis or aphasia by an inhibitory influence. This inhibition would naturally imply alterations of the muscular sense.—Lancet per Med. Record.

The Vogue of Potassium Salts.—"It seems possible," says The Journal of the American Medical Association in its issue of September 19, "that the vogue of the potassium compounds has a historical cause, and is at present due largely to habit. The earliest source of sodium carbonate, from which most of the other sodium salts are derived, was the ashes of seaweeds; the earliest source of potassium carbonate was wood ashes. Wood ashes were plentiful and cheap, inland as well as on the seacoast; hence the natural preference for potassium compounds. It is of interest now to recall that the first impetus to the general employment of sodium salts was given by another devastating war. During the French revolution the important soap industry in France was seriously crippled because all the available potash in France was required for gunpowder, and the importation of soda-ash made from kelp and wrack was suspended. A prize offered by the Directory for the best method of producing sodium carbonate from sodium chloride was won in 1794 by Le Blanc. The sodium carbonate produced by his process, however, was not cheap enough to withstand the competition of the Spanish kelp-ash, which was imported into France as soon as commercial relations with other countries were reestablished, and the unfortunate Le Blanc died by his own hand in a poorhouse. The value of one of its by-products, hydrochloric acid, saved the Le Blanc process from extinction, and it is still extensively used in Great Britain; but the price of sodium carbonate did not become reduced to anything like its present level until the Solvay process came into general use in the latter part of the nineteenth century.

Shoulder-Joint Injuries.—From a study carried on during the past six or seven years, T. Turner Thomas, of Philadelphia (Journal A. M. A., Sept. 19, 1914), contends that in falling, if conscious, one never practically strikes on his shoulder, but always puts out his hand to break the force of the fall and the effect at the shoulder is to carry the arm into abduction, and that hyperabduction is to shoulder injuries what forced dorsal flexion is to wrist injuries and the lateral turns of the foot are to injuries of the ankle. He discusses at length the anatomic conditions and says that dislocation is the end of hyperabduction and requires an extensive tear of the capsule, but there are many lesser grades of injury from lesser force applied, producing lesser tears or sprains of the shoulder-joint. It is a significant fact that the fracture of the surgical neck of the humerus is not infrequently associated with anterior dislocation, and it is more than likely that both are due to the same mechanism of hyperabduction. The acromion is the fulcrum and the humerus the liver and fracture of the fulcrum itself is frequent, as shown by Mencke. The acromion itself is attached to the skeleton by the clavicle, which is an important part of the fulcrum, and may break at any point. We have overlooked, he thinks, the possibilities of hyperabduction of the shoulder-joint. Stiff and painful shoulders following injury in that region have been much discussed as to their cause. In a large number of cases it is probable that these are due to sprain or minor tears of the capsule, and there is frequently temporary paralysis of some of the arm muscles by inclusion of some of the branches of the brachial plexus in the axillary inflammation. Thomas advocates early use of the arm in these cases, if recent fractures and displacements in the joint can be excluded. If these are absent the physician should not be overcautious because of some palsy or pain in the limb on movement. Recurrent dislocations of of the shoulder have been the subject of many theories advanced to account for them, and this has hindered the operative progress in such cases. Thomas has operated on twenty-one shoulders by the axillary route and assisted in one other case, the after-course of which he has followed. He has recognized only one essential cause, an elongation of the axillary portion of the capsule, though the wearing away of one or both bones may facilitate it. The reported results of the capsule operation for this condition have been almost uniformly favorable, but this, Thomas says, is due chiefly to the fact that no one seemed to publish a second report of his cases. He mentions the methods used on some patients, and it has been his rule, he says, to permit and advise the free use of the arm a few months after operation when normal motion is restored. There is no other way to learn the strength of the joint. He is convinced that after the cicatricial contraction exercise the arm has been immobilized a few weeks, it will make the cure complete if the bone has not been too extensively worn away. The common theory of brachial palsy after shoulder injuries is that they are due to more or less complete rupture of one or more roots of the brachial plexus. Thomas believes that most of them are due to resulting inflammation from injury to the joint. He applies this also to brachial palsies in the new-born and is confident that a dislocation occurs in such. Considerable details of his cases are given and methods of treatment described. The chief cause in reducing the old dislocations is still obscure, but from a study on the cadaver Thomas concludes that it is very likely located in the abnormally healed, torn, low capsule. The flail shoulder-joint has been operated on by him in a number of cases. He does not consider it due to rupture of the brachial plexus as generally supposed, but rather to a lax capsule and joint. A summary of these cases and the results of treatment are given. The article is very fully illustrated.

Peaceful Pat.—An old Irishman was approached when walking through a cemetery by a tall, sheet-clad figure, who said in deep tones: "I am the devil!"

Pat said nothing, but strode on, scared, but not willing to acknowledge it. A moment later the figure stepped up again, and several times said: "I am the devil!"

Pat finally could stand it no longer, and he turned and said: "Well, who the hell's disputin' ye?"—Life.

Augmentation of Systemic Resistance to Infections.—Clinical experience seems to show quite clearly that certain infections may be reduced in severity by the administration of Ecthol (Battle). This in erysipelas and furunculosis, to select two infections which have responded to the internal use of Ecthol, it has found that Ecthol exerted an influence on the process of a most beneficial nature, which probably is best explained by assigning to Ecthol the positive power of increasing the phagocytic action of the blood stream.—(Battle & Co., St. Louis, Mo.)

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THE MEDICAL TREATMENT OF HEMORRHOIDS

By Beverley Robinson, M.D., of New York

EVERY general practitioner who has had to do with piles, external, or internal, will be glad to know what follows. They are always troublesome to the doctor, and painful or annoying to the patient. The internal piles, as we know, by reason at times of frequent or abundant hemorrhage, are depleting or threatening.

When ordinary medical treatment fails to effect much temporary benefit, an operation is often sought. If the hemorrhage is frequent and profuse, and the physician is unable soon to arrest it completely, operation is required. Indeed, not infrequently, it should be insisted upon.

So far as the alleviation, and somtimes cure of external piles are concerned, among the different remedies I have tried, I have found none so effectual as the following ointment:

Gallae Pulv	ʒj
Pulv. Camphoræ	
Plumbi Acetatis	āā. grn. x
Cerati	ʒj

M. F. ung.

This ointment may be applied, night and morning, with much advantage. Frequently, it is essential only to smear over the piles as they appear at the margin of the anus. Again, it is well, in addition, to insert with the finger a small quantity of the ointment within the external sphincter. The ointment is not painful and will contract and heal the piles, and also arrest any slight or moderate hemorrhage from them. If there be an anal fissure or ulceration at the entrance of the rectum, it will cure it.

As to internal piles, and particularly when the hemorrhage is frequent and profuse, I now use with excellent results flaxseed enemata, morning and night. The whole flaxseed should be boiled during twenty minutes in water, the proportions being from four tablespoonfuls of flaxseed to one quart of water. The strained decoction should be about the thickness of very rich cream. The injection should be given tepid with a Davidson's syringe, the patient lying on the left side, the hips raised on a hard hair pillow, and the legs drawn up. I know of no form of injection equal to the flaxseed unless it be one of the purified mineral oils now in vogue. The linseed oil in the enema has locally, without question, a very healing effect upon any abrasion or ulceration, which may be present. In addition, however, to these enemata, I also make use of a suppository of Æsculus and Hamamelis—each suppository containing a grain and a half of the two astringents. One of these suppositories is used almost immediately (within five minutes) of the time when the enema is finished. Another is used on awakening in the morning. After the stool (as a rule, in the morning), and the injection then of the flaxseed enema, another suppository is introduced. A suppository is also introduced half an hour before lunch and half an hour before dinner. I begin with two rubber bulbsful of flaxseed decoction, and increase to eight gradually, which equals about eight ounces. Singular to say, this amount is seemingly entirely absorbed, and does not appear in the movements. Further, it is retained by the bowels and does not occasion a movement. Whenever there is constipation, I order a pill at bedtime, of cascara, 2 grains; podophyllin, ½ grain, and extract

belladonna, $\frac{1}{16}$ grain; one or two may be taken, if required.

When the loss of blood had greatly diminished or had completely finished, I have found the so-called "anusol" suppository very useful. They are stated to be composed of bismuth, iodine and resorcin, with zinc oxide and balsam of Peru.

Of course, the habits of the patient should be carefully attended to, and alcohol, coffee and tea, meat and sweets, should be permitted only in very small or moderate amount.

Linseed oil, when fresh, may be given with advantage by the mouth in some instances, but at the present time it seems preferable, if need be, to employ the purified mineral oil in this way, as it is non-absorbable and is usually well supported by the stomach. As an innocuous lubricant of the bowel, and thus acting as a means to prevent any local irritation from the contact of somewhat hardened feces, it may be clearly indicated. Personally, however, I prefer to use it as an enema, beginning with one or two ounces and increasing it to double or triple, that amount if need be.

To any one who has battled with hemorrhoids in the past and who has tried different methods of medical treatment, with little or no success, I feel I can urge the great usefulness of what I now advise.

THE USE OF SCOPOLAMINE-MORPHINE IN LABOR*

A Preliminary Report, Based upon a Study of 100 Cases, with a Detailed Report of Every Tenth Case

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and S. S. Arluck, M.D., of New York
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In 1906, Gauss, of Freiburg, published the results of his observations in 500 cases in which he used a combination of scopolamine hydrobromide and morphine to induce a state of semiconsciousness during labor. This mental state he termed *Dämmerschlaf* (twilight sleep). The studies of Gauss stimulated a general interest in this subject, and very soon numerous articles from the various obstetric clinics appeared. Some surgeons, chief among whom were Krönig, Zweifel, Beruti, Newell, etc., confirmed the work of Gauss and credited to this method all that he alleged for it; others especially Hocheisen, not only denied its efficacy, but attributed to it elements of danger to both mother and child. Notwithstanding the adverse criticism brought forth, Krönig, Gauss, and their coworkers at Freiburg adopted this procedure as a routine form of treatment. In 1907, Gauss published a second article reporting 1,000 cases, and in the spring of this year an extensive study covering a series of 5,000 cases.

In order to have a better conception of the action of these drugs, we must first differentiate between objective pain, by which we understand uterine contraction, and subjective pain, that which is experienced by the mother. Any method which has for its object the elimination of subjective pain must under no circumstances interfere with the objective pain. The central nervous system is the seat of pain perception. Impulses are conducted to and from it. The degree of pain depends both upon the ability of the cortex of the brain to receive, and upon the nerve trunks to conduct. If by any method we are able to minimize either the perceptive power or the degree of conductivity, pain may be markedly diminished and even entirely abolished.

The action of scopolamine is chiefly upon the central nervous system. It quiets the cerebrum and diminishes the perception of pain, without apparently influencing the contractility of the uterus. Labor, therefore, may progress uninterruptedly and the patient may not only fail to recollect pain, but may even be entirely unaware of it.

Clinically, the patients may be divided into three groups: 1. Patients in whom we obtain both amnesia and analgesia, that is, abolition of memory and diminution of pain; 2, patients in whom we obtain analgesia without amnesia; 3, patients who entirely fail to respond to the treatment.

In order to obtain the best possible results with this method, certain cardinal requisites must be strictly observed. It is absolutely necessary that the patient be so placed that she is free from all disturbances. A physician or nurse must be in constant attendance. The effects of the drugs should be carefully watched so that they are repeated at proper intervals. Light in the room should be so arranged that the patient is not disturbed by it. The fetal heart sounds should be carefully studied. Solutions should be obtained from reliable chemists and should be accurately standardized. They should be perfectly clear, never contain any sediment of flocculence, and should preferably be put up in ampules, each containing the quantity required for a single injection. In instituting this method of treatment, it has been our

*N. Y. Med. Jour., Sept. 26, 1914.

good fortune to obtain the services of Dr. K. Schlössingk, who was one of the assistants in the clinic at Freiburg.

Technic.—Treatment is begun only when the patient shows definite signs of active labor. The patient is then put to bed in a dimly lighted room and an initial dose of 0.00045 gram, or approximately 1/160 grain of scopolamine hydrobromide is injected intramuscularly. This is preceded by a hypodermic injection of one-half grain of morphine-narcotine meconate.[1] The effects are now carefully observed with special reference to pulse, respiration, pupillary reaction, fetal heart, and intensity and frequency of uterine contractions. A second injection of scopolamine is given about one hour after the first. About half an hour after this injection, memory tests are brought into play. The patient is shown some object, such as a doll or a watch, and a short while later she is asked whether she saw the particular object in question. She may be asked whether she had a hypodermic injection. Any test of memory will do. The repetition of injections is now primarily gauged by the degree of amnesia present. The interval between injections is approximately from one to one and a half hour. The average normal case requires five to seven injections, although at times it may be necessary to give only two or three, or as many as twelve or fourteen.

After the completion of the first stage, with the presenting part on the perineum, 1 Cc. of pituitrin is often given to hasten delivery. As soon as the child is born, the cord is quickly ligated and severed and the infant is removed to another room. The mother, after being made comfortable, generally falls into a deep sleep, to awake from two to four hours later usually, in complete ignorance of the fact that she has given birth to a child.

In this series of 100 cases in the obstetric services of the Jewish Maternity and Lebanon Hospitals, we had eighty-three per cent. in which there was amnesia with analgesia; eight per cent. in which there was analgesia without amnesia; and nine per cent. in which the treatment failed to induce the desired effect.

Oligopnea is a condition often seen in these babies, but in five to ten minutes they resume good heart action and normal respiration. Resuscitation is unnecessary, for apparently they do best when let alone. In this series eighty-one per cent. of babies cried spontaneously; sixteen per cent. had varying degrees of oligopnea; and three per cent. were asphyxiated. The infant mortality was two per cent.; one child died from melena neonatorum and the other was premature with spina bifida.

Operative Procedures.—In this series labor had to be artificially terminated in twelve per cent. of cases. In two cases the breech presented and delivery was accomplished by bringing down a leg. In nine cases forceps were used; of these two were median and seven low. There were persistent occipitoposterior positions; one was a severe cardiac case, in which it was deemed advisable to terminate labor quickly; one case of nephritis with marked edema was also quickly delivered with forceps. Four cases were delivered artificially because of tedious second stage. In these last mentioned cases the perineum was bulging, with caput showing and practically all that was necessary was extension of the head with the forceps blades. The instruments were then removed and the women allowed to deliver spontaneously.

Anesthetics.—Ether was the anesthetic used where artificial delivery was performed. The patients were quickly narcotized, taking the ether very readily and consuming only small quantities of it.

Post partum hemorrhage.—We have seen no excessive bleeding in any of our cases.

Convalescence.—It is interesting to note how little these patients are physically affected by labor. The exhaustion that usually accompanies labor in primiparæ is entirely eliminated.

We shall now briefly report every tenth case of this series in order more fully to illustrate the technic followed.

Case 1.—Mrs. E. K., aged twenty-five years, para 3 admitted in labor, June 16, 1914. Cervix three fingers dilated, head unengaged, membranes ruptured, cervix thick.

First injection, 6.30 p. m., scopolamine grain 1/160, morphine grain one-sixth; restlessness quite marked. Second injection, 9.30 p. m., scopolamine grain 1/400, morphine grain one-sixth; still quite restless; pulse 108, color normal, respiration 28; fetal heart 140; frequency of pains, three minutes; duration of pains one-half minute. Third injection, 10.55 p. m., scopolamine, grain 1/400.

Patient delivered spontaneously 11.22 p. m., oligopnea of child, lasting three minutes. Placenta expelled spontaneously. Mother very restless, had to be held down during pains. Condition, following day, good. Case only partially successful. Mother did not recollect the time of birth of the child, but remembered having had pain.

Result: Amnesia without analgesia.

Case 10.—Mrs. A. M., aged twenty-nine years, para 5, admitted in labor, June 27, 1914.

First injection, 4.40 p. m., scopolamine grain 1/160 and morphine-narcotine meconate grain one-half. Cervix was three fingers dilated. Right

[1]The morphine was in the form of a proprietary preparation, which is chemically morphine-narcotine meconate and contains 32.2 per cent. of the alkaloid.

[Morphine-narcotine meconate is known as Narcophin. Ed. M. A.]

occipitoanterior position, head engaged, membranes intact, cervix moderately thick. Second injection, 5.45 p. m., scopolamine grain 1/400 given. Patient very quiet, pulse 84, respirations 22, color normal, frequency of pains, three minutes, duration of pains one-half minute. Third injection, 7 p. m., scopolamine grain 1/400.

Patient delivered of normal child, 7.50 p. m., Placenta expelled spontaneously.

Result: Amnesia and analgesia.

Case 20.—Mrs. S. D., aged twenty-four years, para 2, admitted June 30, 1914, os two-thirds dilated, cervix thin, head engaged, membranes intact.

First injection, 2.10 p. m., scopolamine grain 1/160 and morphine-narcotine meconate grain one-half. Second injection, 3.10 p. m., scopolamine grain 1/400. Pulse 74, respirations normal, color normal, frequency of pains, four to five minutes, duration of pains one minute. Patient very quiet. Third injection, 5 p. m., scopolamine, grain 1/400.

Patient delivered of normal child, 5.15 p. m. Pituitrin, 1 Cc., was given at 5 p. m.

Result: Complete amnesia with analgesia.

Case 30.—Mrs. B. M., aged twenty-three years, para 1, admitted July 6, 1914. Cervix two-thirds dilated and very thin, head engaged, membranes intact; pulse 96, respirations 26, color pale; fetal heart 140.

First injection, 5 p. m., scopolamine grain 1/160 and morphine-narcotine meconate grain one-half; pulse 78, color pale, frequency of pains, every four minutes, duration of pains one-half minute; fetal heart 150. Second injection, 6.30 p. m., scopolamine grain 1/400; pulse 96, color pale; fetal heart 146. Pains every three minutes, duration one-half minute. Third injection, 6.35 p. m., scopolamine grain 1/400; general condition about the same, patient very quiet. Fourth injection, 7.15 p. m., scopolamine grain 1/400; condition about the same, pains, every three minutes, lasting one-half minute. Fifth injection, 8.30 p. m., scopolamine grain 1/400.

Patient delivered of normal child, 10 p. m. Placenta delivered by Credé method.

Result: Complete amnesia with analgesia.

Case 40.—Mrs S. G., aged twenty-three years, para 1, admitted July 14, 1914. Five fingers' dilatation, head engaged, cervix thin, membranes intact.

First injection, 5.40 p. m., scopolamine grain 1/160 and morphine-narcotine meconate grain one-half. Pulse 100, face flushed, respirations normal; frequency of pains, every three minutes, duration of pains three-quarters minute; fetal heart 150; patient quiet. Second injection, 6.40 p. m., scopolamine grain 1/400; pulse 84, face flushed; fetal heart 150. Third injection, 7.55 p. m., scopolamine grain 1/400. Fourth injection, 8.55 p. m., scopolamine grain 1/400. Fifth injection 9.45 p. m., scopolamine grain 1/400. 10.20 p. m., morphine-narcotine meconate grain one-half. Sixth injection, 10.25 p. m., scopolamine grain 1/400.

Patient delivered, 10.45 p. m.; oligopnea, lasting five minutes; cord around the neck.

Result: Amnesia with analgesia.

Case 50.—Mrs. S. K., aged twenty-three years, para 1, admitted July 21, 1914; cervix three-quarters dilated, head engaged, membranes intact; pulse 92; respirations normal; fetal heart 154.

First injection, 12.50 p. m., scopolamine grain 1/160 and morphine-narcotine meconate grain one-half; pulse 80, respirations 26, face flushed, pains every five minutes, lasting one-half minute; fetal heart 154. Second injection, 1.40 p. m., scopolamine grain 1/400. Condition remained about the same, patient moderately quiet. Third injection, 2 p. m., scopolamine grain 1/400.

Patient delivered of normal child, 2.25 p. m.

Result: Amnesia with moderate analgesia.

Case 60.—Mrs. C. H., aged twenty-two years, para 2, admitted July 28, 1914. Os fully dilated, membranes intact, head slightly engaged; pulse 84, color normal, respirations 26, pains every three minutes, duration three-quarter minute.

First injection, 1.35 p. m., scopolamine grain 1/160, and morphine-narcotine meconate grain one-half; pulse 82, respirations 22, color normal, pains every three minutes, lasting one minute; fetal heart 150; patient very quiet. Second injection, 2.30 p. m., scopolamine grain 1/400; pulse 80, color normal; fetal heart 148; pains every four minutes, lasting one minute. Third injection, 3 p. m., scopolamine grain 1/400.

Patient delivered of normal child, 3.17 p. m., placenta expelled spontaneously.

Result: Complete amnesia and analgesia.

Case 70.—Mrs. A. N., aged twenty-three years, para 1, admitted August 2, 1914; cervix two-thirds dilated, head engaged, membranes intact; pulse 60, color normal, respirations 24; pains every five minutes, duration three-quarter minute.

First injection, 9.45 a. m., scopolamine grain 1/160, and morphine-narcotine meconate grain one-half; pulse 60, color normal, respirations normal; fetal heart 140; patient quiet. Second injection, 11.25 a. m., scopolamine grain 1/400; face flushed, otherwise general condition unchanged. Third injection, 12.05 p. m., scopolamine grain 1/400. Fourth injection, 12.45 p. m., scopolamine grain 1/400. Fifth injection, 2 p. m., scopolamine grain 1/400. Sixth injection, 2.45 p. m., scopolamine grain 1/400. At 3.20 p. m., there was a second injection of morphine-narcotine meconate grain one-half, and at 3.30 p. m., 1 Cc. of pituitrin was injected.

Patient delivered with forceps, 5.45 p. m., occipitoposterior position; oligopnea, lasting only a few minutes.

Result: Complete amnesia with analgesia.

Case 80.—Mrs. M. K., aged thirty years, para 2, admitted August 11, 1914. Cervix dilated four fingers, head engaged, membranes intact; pulse 80, color normal; fetal heart 144; pains every three to four minutes, duration one minute.

First injection, 6 p. m., scopolamine grain 1/160, and morphine-narcotine meconate grain one-half; pulse 88, color normal; fetal heart 130; pains every three to four minutes, duration one-half minute; patient quiet. Second injection, 7 p. m., scopolamine grain 1/400; pulse 90, respirations 24, color normal; pains every three minutes, duration one-half minute; patient very quiet. Third injection, 8.30 p. m., scopolamine grain 1/400. Fourth injection, 9.30 p. m., scopolamine grain 1/400. Pituitrin, 1 Cc. injected 10.30 p. m., scopolamine grain 1/400. Fifth injection, 10.30 p. m., scopolamine grain 1/400. 10.30 p. m., pituitrin, 1 Cc. injected. Pituitrin 1 Cc. repeated 1.30 p. m.

Patient delivered spontaneously of normal child, 11.45 p. m.

Result: Complete amnesia with marked analgesia.

Case 90.—Mrs. P. M., aged twenty-five years, para 2, admitted August 16, 1914; cervix four fingers dilated, head engaged, membranes intact, cervix thick; pulse 102, color normal, respirations

22; fetal heart 134; pains every five minutes, duration one-half minute.

First injection, 9.20 p. m., scopolamine grain 1/160, and morphine-narcotine meconate grain one-half; pulse 88, faced flushed, fetal heart 134; pains every three minutes, duration one-half minute; patient quiet. Second injection, 10.10 p. m., scopolamine grain 1/400; pulse 88, face flushed; pains every three minutes, duration one-half minute; patient quiet. Third injection, 11.55 p. m., scopolamine grain 1/400; pulse 88, face flushed; pains every two minutes, duration one-half minute. Fourth injection, 1 a. m., scopolamine grain 1/400.

Patient delivered of normal child, 1.15 a. m.

Result: Amnesia with analgesia.

CONCLUSIONS

Standard solutions are absolutely essential to the success of this treatment. The facilities should be such that the patient is not unduly disturbed. The treatment does not affect the first stage of labor, but the second stage is somewhat prolonged. Pain is markedly diminished in all cases, while amnesia is present in the greatest number of patients. This treatment does not in any way interfere with any other therapeutic measures which may be deemed necessary for the termination of labor. The fetal heart sounds must be carefully watched; sudden slowing calls for immediate delivery when possible or the discontinuance of the treatment. Oligopnea, sometimes present, produces no ill effects, for the babies quickly resume normal respiration and good heart action. We have noticed no excessive hemorrhage under this form of treatment.

Finally, judging from our observations and experience, we feel that this method of treatment should be given a fair trial. It is only the varied experience of competent men that will tend to settle this extremely interesting subject. It is the duty of the medical profession to set the public aright on this very important question. For our part, we believe that this mode of treatment relieves the woman of the agonies of labor and in addition instills a feeling of confidence which materially aids her in passing through the trying ordeal.

62 West Eighty-ninth Street.

THE TOXICITY OF CAMPHOR

D. J. Milton Miller, of Atlantic City, N. J., reports a case in which a baby of eighteen months was given a brimming teaspoonful of camphorated oil by mistake, containing from 14 to 15 grains of camphor, without causing any symptoms of note. He mentions it because more or less alarming symptoms are often produced by much smaller doses, though fatal poisonings are very few.—Jour. A. M. A., Aug. 15, 1914.

THE TREATMENT OF SCARLET FEVER*

By Samuel S. Woody, M.D.,
Chief Resident Physician to the Philadelphia Hospital for Contagious Diseases, Bureau of Health, Philadelphia, Pa.

SCARLET FEVER must be included among those diseases for which there is no specific treatment. Its cause is unknown and we have no agent whose influence is exerted against this causative factor directly. The treatment therefore is limited to the general care of the patient and to the prompt recognition of and attention to symptoms and complications as they arise.

Isolation of the patient must be insisted upon for the good of the public in the prevention of the spread of the disease. In private houses effective quarantine can be secured only when a whole floor is set aside for the use of the patient. Rigid quarantine regulations when enforced by the municipality do much to prevent the spread of the contagion. In any event the greatest care should be exercised by the physician, nurse, and attendants in the use of gowns in the sick-room and in the cleansing of hands, linen, utensils, etc.

In institutions it is recommended that each patient have a minimum of one hundred and forty-four square feet of floor space. Septic and mild cases should be kept in spearate wards. In fact, the more we approach the complete isolation of individual patients, the closer we come to the ideal.

Smaller patients should be kept in bed at least four weeks. This prevents them from being subjected to the dangers of changes in temperature and carries them past the period when kidney complications are likely to occur. In hospital practice this also renders easier the enforcement of ward discipline and prevents in a mesaure the spread of cross-infections. Weather conditions should influence us in choosing the time of allowing the convalescent out-of-doors. On quiet, sunny days any child able to stand well or to walk, after being once out of bed, should be allowed out-of-doors. Damp or inclement weather of course will keep the patient indoors.

Careful attention to the skin should be given from the very first. A daily bath with soap and tepid water is positively called for. This not only assists in elimination, but helps to rid the body of dead skin and to promote the growth of new skin.

During the stage of fever a tepid sponge should be given every third hour if the temperature goes as high as 102° F. In convalescence a daily cleansing tub bath should be given.

*Therapeutic Gazette, Sept. 15, 1914.

Inunctions used with the idea of preventing the scattering of the scales of skin are not called for in hospital practice. The idea that the infecting agent resides in the scaling particles of skin has been discarded by practically all contagious workers. It is the general belief now that the specific organism exists in the discharges from the nose, throat, ears, and glands.

The temperature of the sick-room or ward is important. We find that patients especially the septic ones, thrive best when kept in rooms at a temperature of from 55° to 60° F. The milder acute cases as well as convalescents do well in a temperature of 68° to 70° F.

Diet in scarlet fever must receive the closest attention. As vomiting in most cases is quite persistent in the first twenty-four hours, it will do no harm if all nourishment be withheld during that time. Thereafter during the acute stage a pure milk diet is the ideal one. It is my practice to have the patient given food at three-hour intervals as much milk as the patient may desire. The patients, however, are not awakened for food or medicine. Meat broths are not desirable if milk can be taken. But in addition to the milk a daily feeding of some fresh fruit juice, well diluted with water, should be given. Water should be gi en freely at regular intervals. There is no objection to the use of good carbonated waters.

In mild cases, or those of moderate severity, no difficulty will be experienced in keeping up the patient's strength on a pure milk diet. The average case I keep on milk and fresh fruit juices for seventeen days. Then if the temperature be normal, the diet is increased by the addition of soft boiled eggs, stewed fruits, oatmeal, puddings, bread and butter. In a week more, when the danger of nephritis is practically over, the diet may be again increased so as to include everything in the way of plain food, meat being allowed but once daily. The diet above described is sufficiently liberal to keep up the strength of the patient, and at the same time imposes not too great a task upon the kidneys.

In septic cases, when the fever persists for an unusually long time and especially when the patient is further weakened by complications, addition to the milk diet must be made even sooner than in the mild cases. Malted milk prepared in various ways, soft boiled eggs, strained oatmeal, arrowroot, and stewed fruits may be given safely before other heavier foods are indicated. In adults a little weak tea or coffee may be given.

In the cases of persistent vomiting rectal feeding may be necessary, using beef juice, liquid peptonoids, and whisky in saline solution. When the sore throat is of a very severe nature, swallowing may be difficult. It is rare, however, that this situation cannot be successfully met by the exercise of the proper amount of patience and tact on the part of the parent or nurse.

Febrile complications call for a continuance of the milk diet, except as mentioned in cases of severe sepsis. The diet in nephritis will be considered under that heading. Other complications call for no special modification of diet.

As has been stated, there is no special treatment for scarlet fever. The medical treatment, except in the case of complications, is comparatively simple.

A bright, well-developed rash denotes good heart action and is to be desired. Should the rash be scant and not of a bright-red color, the use of external measures, such as the hot pack, the mustard pack, or wrapping the patient in hot blankets, is called for. This is true even when the temperature is excessively high, because the resulting increase in skin elimination will bring with it a drop in temperature and render the patient less restless.

During the fever I routinely give potassium citrate, alone or in combination with sweet spirits of niter and solution of ammonium acetate. These act as a febrifuge or diuretic. The citrate is given until the temperature had been normal for four or five days. Then Basham's mixture is substituted, and later, when the patient is on a full diet, the syrup of iodide of iron with syrup of hypophosphites compound is the tonic of choice.

In the hospital work the hair of all patients under fourteen is cut. In private practice the physician must be guided by circumstances.

Although the treatment aimed to counteract the causative agent of scarlet fever has so far been of no avail, yet this has been attempted. The use of polyglot vaccines from many strains of streptococci has not given results of value and has been abandoned. At present at the Philadelphia Hospital for Contagious Diseases we are making certain investigations in the use of a leucocytic extract, made after the method of Hiss. We hope to say more later concerning this. Attempts also have been made to influence the course of the disease by the use of blood serum obtained from convalescents, the serum being tested by the Wassermann reaction and used with every necessary precaution. Hitherto it has been impossible to obtain the serum in

sufficient quantities to furnish facts as to its value.

Treatment of special symptoms and complications of scarlet fever is a matter of greater difficulty than the management of a simple case. The mouth and throat should be subjected to a thorough daily inspection. It is possible for the mouth at any stage of the disease to show evidences of all forms of stomatitis, of tonsillitis, diphtheria, Koplik's spots, or Vincent's angina. In the ordinary sore throat of scarlet fever, nothing further is required than a mild gargle—salt solution or a mild alkaline wash, such as liquor antisepticus alkalinus of the National Formulary suitably diluted. These gargles are merely cleansing and by no means germicidal. In septic sore throat the same method is used. If ulcerations occur they are cleansed by local applications of hydrogen peroxide, followed by a half-strength saturated solution of potassium chlorate. Some of the more obstinate cases will require applications of 10 per cent. solution of copper sulphate. In certain cases, however, and under certain conditions I do allow irrigations with normal saline as hot as can be borne with comfort. This is permissible only with adults or larger patients, and when we have a nurse we know to be careful. There is far more danger from too much interference with the nose and throat than from too litle. This is especially true with institutional cases.

The more severe complications may be grouped for convenience under two heads—those like nephritis and sepsis, which are systemic or general, and the more local complications, such as otorrhea, rhinitis, and enlarged glands.

Septic or toxic cases of scarlet fever present a class of patients who are very ill; who need the most careful attention to secure recovery. The diet has been mentioned already. It should be kept as a fever diet, yet in some cases must be somewhat broadened to maintain the patient's strength. The use of saline by bowel is a routine measure in all septic cases. I prefer to give continuous proctolysis after the method of Murphy. In some toxic cases, and especially in those in which great restlessness will prevent retention of the saline, I give it as a high injection at intervals, say four ounces every six hours. Stimulation is practically never needed in simple and uncomplicated scarlet fever. In the septic form it is often called for. I use whisky in one-drachm doses every four hours for a child six or eight years of age, and occasionally combine with it strychnine and caffeine in appropriate doses.

Beyond stimulation, elimination, and the maintenance of feeding, the treatment resolves itself into the management of intercurrent complications.

The most dreaded complication of scarlet fever is undoubtedly nephritis. The use of the milk diet and the mild diuretics while there is fever does much to avoid its occurence. The urine should be examined daily, and if possible measured. With children, especially in institutions, the latter is di ficult. I rely principally upon the routine chemical and microscopical examination. As soon as albumin appears in the urine vigorous treatment should be instituted. This must include:

1. Free purgation by magnesium sulphate in adults and larger children, and by castor oil in smaller children, say those under four years.

2. The hot pack. This should be used in varying frequency from once daily to every four hours, and should be continued in use until on four successive days the urine is negative. After this the packs should be gradually withdrawn and the diet correspondingly increased. I consider the hot pack as our most important means of combating nephritis because of the vigorous skin elimination it causes. For the ordinary hot pack we may substitute one given by use of the electric heater or cabinet.

3. The use of diuretics. Potassium citrate alone or in combination, as mentioned above, is given routinely. I certainly consider these worthy of use. In the later stages of nephritis, when uremia is present, Basham's mixture is substituted. In addition we may use caffeine, diuretin, and infusion of digitalis. The latter I never use as a stimulant in scarlet fever, but as a diuretic only. If the stomach be retentive, all medicines are given by mouth. It is almost needless to mention that during acute nephritis the patient is kept on an absolute milk diet and given water freely. Later in the disease, say after three or four weeks, when there is anemia and emaciation, even though albumin may persist in the urine, the diet may be increased advantageously by the addition of eggs, bread and butter, and stewed fruits.

Under such vigorous treatment uremia should not supervene. If, however, a patient be brought into the hospital unconscious or in convulsions, the usual treatment for nephritis is carried out. In addition, venesection and purgation with oleum tiglii or elaterium should be routine measures. The use of dry cups and also hot saline by bowel is indicated.

Whether poultices do any good I cannot

state positively. They do no harm and therefore are used—flaxseed and powdered digitalis leaves, four parts to one, or flaxseed and mustard, sixteen parts to one. These are made large enough to cover the entire lumbar region, and applied as warm as can be borne with comfort.

The other systemic conditions with which we most often have to deal are delirium and restlessness. The use of the ice-bag to the head, the sponge-bath, and in some cases the hot pack, is indicated. Amongst drugs, chloral, the bromides, and paraldehyde are the safest and best. In a few instances I have employed lumbar puncture followed by injection of a magnesium sulphate solution in sterile water, as is done in the treatment of tetanus. Whether there is anything of value in this treatment will have to be decided after further trial.

Of the more local complications we must consider:

Adenitis of the cervical variety. This is best treated by hot fomentations, or preferably hot poultices. Either the adenitis subsides or softening and suppuration take place, to be treated in the accepted way, by incision and drainage.

If there be a cellulitis, incision should be deferred until softening has taken place.

Arthritis must be treated by putting the affected joint or joints at rest. The use of salicylates internally and externally, or hot fomentations of magnesium sulphate solution, may be of some aid.

Otorrhea calls for most careful treatment in the acute stage. Any symptoms directing attention to the ears should call for a thorough inspection, and if the drumhead be red or bulging, incision in the lower posterior quadrant is called for. This brings instant and complete amelioration of symptoms, and should be done always. I do not believe in syringing discharging ears in the course of scarlet fever. External cleansing as a hygienic measure and to maintain free drainage is all that is necessary. If redness, tenderness, or fluctuation appear behind the ear, the periosteum over the mastoid should be incised. Rarely is further treatment necessary. I am opposed to the early radical mastoid operation. Operation should be delayed and will not be necessary unless other and more acute symptoms arise. Deafness, in my experience, is rare as a result of otitis media in scarlet fever.

Probably the most intractable of all the complications of scarlet fever is rhinorrhea. In most cases it will resist successfully and indefinitely all treatment. This is especially annoying both to patient and doctor, because of the resulting prolongation of quarantine. Here, as in the handling of throat and ear conditions, the policy of conservatism is the better one. To facilitate drainage by the prevention of crust formations, I employ a formula of carbolic acid, eucalyptol, and liquid albolene, liberally applied to the nares. Instillation of a few drops of a 10 per cent. solution of argyrol may also be of benefit. The use of autogenous vaccines has been tried and abandoned.

And lastly, there must be included in the treatment of scarlet fever the determination of the time when a patient is fit for release from quarantine, when as nearly as we can judge he ceases to possess the power to infect. Because of its bearing upon the general public health there is nothing which calls for greater care.

There are no certain means by which we can arrive at a positive conclusion as to when a scarlet fever patient ceases to be a disease carrier. "Return cases," occurring after about two to five per cent. of all hospital discharges, according to all statistics, have been the bugbear of physicians, and especially of those doing institutional work.

My own methods in this matter are based upon experience only. Approximately they are as follows:

All adults and larger children, never the subjects of complications, may be discharged any time after a detention of thirty-five days dating from onset of illness.

Mild cases in smaller children not the subject of complications will require a minimum detention period of forty-two days.

Cases with rhinorrhea are detained three months, and in every instance should be cultured for diphtheria bacilli.

Otorrhea calls for detention of from three to four months. A "running ear" should be kept for four months; a moist ear, in which but a few drops show every day or so, may be released in a shorter time, say in three or three and one-half months.

No cases with acutely inflamed glands should be discharged until all signs of inflammation shall have disappeared. Suppurating glands must have healed perfectly before the release of the patient is permitted.

Desquamation in itself probably does no harm at any stage of the disease, and certainly none after the end of the fourth week. Because, however, of the almost universally accepted belief in the infectiousness of the scales of skin, it is my custom to see that all cases are free from

them before being released. In most all cases desquamation is complete by the end of the sixth week.

At the time of the patient's discharge he should be given a through and vigorous cleansing bath of carbolic soap and water. This should include the scrubbing of the head and the cleansing of the nose and ears. The mouth should be made clean with a mild antiseptic gargle after attention to teeth and gums by a dental surgeon.

The apartments occupied by the patient should be cleaned and fumigated in the accepted way. Iy own feeling is that a thorough washing of the rooms, furniture, and utensils with soap and water, and the steaming of mattresses and linen, will be all that is required.

And finally, in spite of the most careful observation of the patient from the beginning of illness to the end of quarantine, and in spite of the most painstaking attention to everything in any way connected with the treatment of the patient, the greatest danger of disease-spread will be the patient himself.

TREATMENT OF SOME EFFECTS OF ROENTGEN RAY BURNS*

By John C. McClintock, A.M., M.D.

THE pioneer workers in the field of radiography and radiotherapeutics did not understand the dangers to which they were exposed, and later workers, when they realized the risks they were taking, continued the work—knowing that they were sacrificing themselves, as the pioneers had already sacrificed their own health and lives, for the benefits that their patients were deriving.

The present-day workers with the Roentgen ray have ample protection, but there are many doctors suffering from the chronic burns which they received in their earlier work.

It has been my fortune to see some benefits from the treatment of the effects of the exposure to the rays, under the old conditions. The good results of the treatment have been so marked that I feel impelled to give out this short note.

From original observations, I had noted that, in the treatment of skin diseases, senile keratoses have all been benefited on the administration of tonic doses of quinine, alternating with tablets of desiccated thyroids.

Reasoning from this, I concluded that the fibroid growths, which followed the X-ray burns, might possibly also be, in a like manner, benefited. The trial of the treatment showed this to be a fact, that they were either cured or very materially helped under this treatment.

I had also observed—and this is not an original observation—the marked sclerolytic effect on fibroid new growths, from the subcutaneous administration of fibrolysin, and I added this preparation to the treatment of the fibroses following the injuries of the X-ray.

All of these fibroid growths are very prone to degenerate; to take on an epitheliomatous condition. Where this has supervened I have not temporized, but have dealt in a radical manner with such a degeneration, either by an excision together with the cauterization of the base, or by preference with the usual caustic paste.

In looking over the literature, many of the writers, I notice, speak of early excision. I have not felt favorably inclined toward surgical procedures. Some speak of cutting the nerves going to the affected parts, just as Hilton did for other chronic ulcers.

Savill reports, or gives the notes of a case of X-ray ulcers of the shoulder, cured by Hilton's method. (London Lancet, Dec. 18, 1909, and an abstract of it is in the N. Y. Med. Jour., Jan. 15, 1910.) The article is valuable from the fact that it might be worth while considering cutting some of the nerves going to the affected part, and also from the fact that it brings up the subject of injections of fibrolysin, with the object of softening the thick sclerodermatous parts. All of the thickened parts became softer and thinner under these injections.

McCullough, in the January 1, 1910, Lancet, endorses Saville's article, and endorses the use of fibrolysin as a sclerolytic agent.

In Hilton's "Rest and Pain," his method for the cure of a painful ulcer—an irritable ulcer—was to cut the nerves going to the ulcer, thereby putting it at rest, permitting the patient to rest, thus allowing the patient to recuperate, and as a consequence the ulcer would heal.

For some of the chronic cases, particularly those commonly involving the backs of the hands in X-ray workers, Eddowes has found few remedies to equal compound tincture of benzoin.

In the Jour. A. M. A., March 21, 1908, they say editorially, "There is probably a close essential resemblance between the precancerous keratoses of old age, and those of chronic X-ray dermatitis. It is probable that the senile skin dotted with keratoses is an expression of the irritating effects of

*Jour. Kansas Med. Soc., Aug., 1914.

actinic light. The notable absence of epithelioma in the negro, confirms this view. Advise protection from further irritation of same nature, frequent greasing of the hands with fresh rose ointment. Keratoses should be excised or destroyed. They may be destroyed by deep freezing with liquid air or carbon dioxide snow."

Pusey, in the Jour. A. M. A., Jan. 23, 1909, p. 394: "For small tumors, liquid air and carbon dioxide snow are excellent. Keratoses should be destroyed as rapidly as they develop. All these lesions are amenable to treatment. Destroy them when they are destroyable."

Leonard, on this same page, does not seem to favor operation.

In the N. Y. Med. Jour., Jan. 20, 1906, p. 143 are a couple of prescriptions for applications for X-ray burns.

In the Med. Record, Oct. 13, 1906, copied from the British Med. Jour., Sept. 22, 1906: "Harris tried all sorts of remedies for his fingers, dispensed with salves, and resorted to very fine sandpaper, which he used at first daily, subsequently less often with marked benefit. He had a couple of painful warts and small ulcers which would not heal and caused excruciating pain. These were excised, healing occupied three times the normal period. Eventual results most gratifying."

In the Jour. A. M. A., Nov. 3, 1906, p. 1493, is an article, also one on page 1498, reporting a case where sandpaper could not be used on account of sensitivity, and closes by saying: "Hard lumps can be removed with emery paper, but they recur and develop into ulcers."

Nerve section appears to be worth thinking about, and I would not dismiss the sandpaper treatment without careful consideration, for I have found cuts straight through the skin that would not heal, but rather keep tearing open in fissures, and the thickened edges of the cut prevent healing. In such cases I shave down the thickened edges with a razor and, if the edges are thickened and hardened, multiple incisions have been made, and then they will frequently heal promptly.

They still talk of X-ray keratoses being similar to senile keratoses. Senile keratoses always disappear when put on a few months treatment of thyroid tablets, giving 2 to 5 grains, twice a day. Sometimes I have given as much as thirty-five grains a day. I have usually continued the administration of thyroids (unless there was some contraindication to their use), for a period of about three weeks, then discontinue and, for the same length of time, give small tonic doses of quinine, say a half grain tablet every two or three hours, then dropping it and beginning over again with the thyroids, and again the quinine. When not taking thyroid tablets, they take from 4 to 6 half grain doses of quinine each day, and those senile keratoses and other senile skin changes are cured, in these old men. It does not however, cure the man of being an old man, and he has a recurrence of his trouble, because he IS old, and his thyroid gland has atrophied and has ceased to furnish the thyroid secretion, a certain amount of which he should have. In a year or two I give him another month's treatment. This procedure has cured X-ray keratoses and should have a place in the treatment of other cases.

The above has been written primarily for the possible profit one of my patients might derive from it, and secondarily, that it might possibly be of benefit to some of my friends and workers in the X-ray field, who may have suffered from the effects of the Roentgen ray. To this I have added some references, quotations and suggestions from other reporters.

As far as my own contribution goes, I could sum up all of my own original work and observation in the following line: *Quinine and Thyroids for the chronic effects of X-ray Burns.*

TREATMENT OF SPASMOPHILIA

By Heinrich Reye, B.S., M.D., of Ann Arbor, Mich.

[In an exhaustive article in the "Archives of Pediatrics" for September, 1914, Dr. Reye reviews the literature on the subject of Spasmophilia and presents the theories that have been advanced by investigators. It is evident from the reports presented that there is no unanimity of opinion, though a majority of the workers seem to favor the view that there is a disturbance in the intermediary salt—especially the calcium-metabolism which may be due to an insufficient functioning of the parathyroids. We reprint below that part of Dr. Reye's interesting paper which deals with the question of treatment. —Ed. M. A.]

Most authors recommend that the spasmophilic infant be put on mother's milk if possible or that a wet nurse be secured. In a large number of cases this measure is sufficient to cause disappearance of symptoms. When gastrointestinal disturbances are present it is best to discontinue all food for twenty-four hours and put the child on a tea diet. If severe laryngospasms and eclamptic conditions are present it is advisable to evacuate the bowels with 5 or 10 Cc. of ol. ricini. After the twenty-four-hour water or tea diet it is usually best to start with 5 per cent. gruels, to which 3 to 5 per cent. of lactose is added. After three

to seven days the caloric value of the food may be increased by adding precipitated and washed casein and fat. As soon as possible milk should be slowly added. Though relapses are to be feared, yet a carbohydrate diet poor in salt lasting longer than eight days has also its dangers in infancy, especially if there occurs loss in weight, subnormal temperature and collapse. Nothing is surer to prevent the appearance of spasmophilia than nursing the breast. If bottle feeding has to be resorted to, it should be done with limited amounts of milk, that is, ¾ of a liter or at most 1 liter per day in order to avoid the dangers of laryngospasms and eclamptic seizures as much as possible.

Netter recommends calcium chloride as a drug for tetany. He uses 2 grams with prompt results in spasms of babies. Larger doses act even better. Rosen and others recommend phosphorus and cod-liver oil in the proportion of 0.01 to 100. According to Schabad this gradually leads to increased calcium rentention. L. F. Meyer has seen good effects from large doses of calcium bromide in cases of laryngospasm. He gave 2 to 3 drams per day. Quest drew no conclusions for treatment from his experiments. He thinks that the calcium metabolism is not sufficiently known in man and that much depends on the form in which calcium is given. Other minerals and organic constituents are probably inportant in the retention of calcium. For this speaks the favorable results obtained by the change of diet and by giving phosphorus. Finkelstein thinks that phosphorus is an antispasmodic, but its effects are not remarkable and not pronounced without change of diet. It is possible that the phosphorus produces a favorable effect on the calcium metabolism.

With children over a year, milk can be dropped for a week without harm. In all cases of spasmophilia, cod-liver oil or phosphorus and cod-liver oil is indicated. On this alone, in many cases, without any change in the diet, the symptoms of spasmophilia will disappear. Phosphorus with other oils is ineffectual. The phosphorus must be fresh and renewed every two weeks at least, as it is said to have no action if oxidized. Only elementary phosphorus seems to have any influence on spasmophilia or rachitis.

Chloral is very useful as a symptomatic means to arrest the convulsions. It has the advantage over chloroform that it can be left in intelligent lay hands. The proper dosage is about .5 gram, best given by enema. Young children will bear this dose without harm. Usually it leads to subsidence of the spasm in a few minutes and sleep for several hours. The same dose can be repeated the same day, or even for several days, until the causal treatment becomes effective. Children with predisposition to spasmophilia should be kept from excitement and from eating copiously; they should be much in the open air, and especially protected against infections, particularly whooping-cough.[1]

According to Finkelstein and Zybell, phosphorus and cod-liver oil is not a panacea. In twenty-four out of thirty-two of Finkelstein's cases the electrical irritability returned to normal, but it took five weeks to do it. Dubois and Stolte call attention to the fact that the excretion as well as the disposition of the slowly soluble calcium takes place only very gradually. For that reason we do not see any effect of calcium when used therapeutically until after weeks of treatment.

From the experiments of Schabad, we know that 20 to 60 per cent. of calcium acetate is retained by the organism. Calcium phosphate and calcium citrate are not retained at all. Calcium acetate also improves the calcium retention of the food. According to Schabad the good effects of phosphorus and cod-liver oil in spasmophilia depends in the first place upon its power of increasing the calcium retention. Rosenstern in his investigations gave to infants 110 grams of a 3 per cent. $CaCl_2$ solution. He usually noticed a quickly appearing and also rapidly disappearing effect upon the cathodal opening contractions. However, he did not suceed in influencing them for any length of time. The infants did not take kindly to the solution and occasionally vomiting occured. The maximum effect appeared six hours after the administration; twenty-four hours later the reaction had disappeared. Trousseau's sign was absent only occasionally. The severe laryngospasms disappeared occasionally for twelve hours. In twenty-four cases Risel saw the electrical irritability returning to normal under the effect of the calcium acetate. Bogen and von Pirquet call attention to the fact that the permanent giving of calcium has no effect. According to Grosser, the calcium retention may increase over 60 per cent. after the injection of calcium glycerophosphate. The calcium content of the food is also retained better. Calcium chloride as well as calcium lactate and calcium acetate used subcutaneously produce infiltration and pain. Berend made this same observation.

[1] In recent investigations Dr. Berta Erlanger comes to the conclusion that there is no particular relation between spasmophilia and whooping-cough.

According to Zybell the favorable effect of calcium was demonstrable in seventeen of the twenty-eight cases. The improvement, however, was restricted in most cases to a temporary change in the K.O.C., while the clinical symptoms remained unchanged. In fourteen cases the K.O.C., increased after the administration of calcium, so that its irritating effects were thus demonstrated. From Zybell's more recent investigations, it appears that the antispasmodic effects of calcium were seen in 61 per cent, of the cases. In twenty-five it seemed to have no effect, in fourteen it had an irritating effect, while the clinical symptoms were, as a rule, not influenced. From the experience with calcium salts we may conclude that in certain cases we are able to influence the K.O.C.; however, occasionally the opposite effect may be noticed. A marked change in the spasmodic condition occurs only in a few cases.

The facts ascertained by Loeb induced Aschenheim to pay especial attention in the treatment of spasmophilic children to the numerator and the denominator of the quotient Na/Ca, attempting as far as possible to reduce the amount of irritating salts, not only in the food, but also in the body of the child. He gave a whey-free milk ("eine Aufschwemmung des Gerinnsels" which has been washed several times in water, and which results from the treatment of cold milk with Pegnin, in unsalted gruels to which was added a 3 per cent. Liebig-Soxhlet zücker or a 3-5 per cent. sugar of milk). He takes care that sufficient calcium is retained by giving phosphorus and cod-liver oil. This, according to K. Meyer, not only improves the Ca balance, but at the same time also diminishes the balance of K_2O and Na_2. In the combination of phosphorus and cod-liver oil with whey-free milk, Aschenheim thinks that we have a therapy which, from two different points of attack, diminishes the quotient: $\frac{\text{alkalies}}{\text{alkaline earth}}$

Reasoning from the fact that the magnesium balance was disturbed along with the calcium phosphorus in spasmophilia and that the magnesium may at times take the place of the calcium, and that it does not possess the irritating effects of calcium, Berend experimented with injections of magnesium sulphate, apparently obtaining very good results. Bethe and A. G. Meyers emphasized the depressing quality of magnesium which shows itself in the diminution of the existing irritating condition. Fienga comes to the same conclusion. Meltzer has proved that magnesium salts have a very depressing effect on both the sensory and the motor spheres. This result can be immediately reversed by means of calcium. On the basis of Meltzer's experiments on animals, Berend injected magnesium sulpahte subcutaneously. He began with an initial dose of 20 cg. to the kilogram of body weight. In not a single case did he notice any toxic effects. In the course of his experiments he found that even double the amount is without toxic effects and is borne nicely by infants even if the injection is repeated daily. In all his cases he noticed that the effect of the magnesium showed itself in the disappearance of the restlessness of the child. Occasionally he obtained fever. Usually he gave for injection from 15 to 20 Cc. of an 80 per cent. magnesium sulphate solution. The magnesium sulphate treatment influences most quickly the electrical irritability and the carpopedal spasms; less quickly the eclamptic seizures and Trousseau's sign. The laryngospasm is least affected, but, nevertheless, more quickly than by the usual method of treatment. The course of tetany is always shortened by the magnesium treatment. Berend thinks that in the magnesium sulphate treatment, artificial foods may be continued during the treatment of spasmophilia with much less danger. If a pathologic K.O.C. alone is present without spasms, phosphorus and cod-liver oil is indicated, but not the magnesium. On the basis of his experience he advises the following procedure: Give the child immediately an injection of magnesium sulphate corresponding to his body weight, empty the bowels with castor oil and after a six or twelve hours fast give a salt-free gruel adapted to the patient's age. In case the spasmodic condition does not show any improvement in two hours, it is best to repeat the magnesium injection. The subsequent treatment depends upon whether or not the spasms have disappeared on the following day. In case the K. O. C. is still very pathologic, it best to give another injection. If the spasm has not disappeared, it is advisable to increase the amount of magnesium by one-fourth. Usually only one injection in twenty-four hours is necessary. Rarely does the treatment take longer than forty-six days. Berend also administers phosphorus and cod-liver oil, beginning with the second day of the magnesium treatment. In case of reappearance of symptoms a new injection is indicated. If the tetanic spasms have entirely disappeared and only the laryngospasms continue, which are not influenced by the magnesium, Berend stops the magnesium treatment and continues with phosphorus and cod-liver oil. In the magnesium

treatment there is no danger of inanition, because it is not necessary to withdraw the food for more than half a day. He emphasized particularly the necessity of a salt-poor diet.

The administration of parathyroid extract has given no result so far. The transplantation of parathyroids in animals has also been unsuccessful. This may be due to faulty technique.

TYPHOID FEVER IN EARLY LIFE*

By J. P. Crozer Griffith, M.D., of Philadelphia
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Although long admitted as a disease of frequency in later childhood, and to a less extent in early childhood, time was when the occurrence of typhoid fever in infancy was considered of the greatest rarity, or even denied. The passing of years changed all this; it seems no longer necessary to advance proof, as I have often done in the past. Series of cases in the very young have been reported by different authors, and a short time ago I published one,[1] perhaps the longest on record, of seventy-five cases occurring in children of two and one-half years or less, seen in my own practice, or under the care of my colleagues and myself in the Children's Hospital of Philadelphia. Of course, no one has ever thought of asserting that typhoid fever is as frequent in infants as in adults.

With the existence of danger through infection to individuals of any age, it is evident that we cannot look too early into the possible means by which the germs may be transmitted. Numerous epidemics of typhoid fever spread by milk are on record; and since this article is such a prominent part of the diet of children, the care of the milk supply is of the utmost importance. A great danger, too, although less frequent, is that of house infection. The close association with other members of the family, the frequent handling necessary, and the like, make typhoid fever in subjects under one year of age often dependent upon the existence of house epidemics. The particular etiological influence of this, so far as infancy is concerned, is, however, overrated. My own experience, based upon the seventy-five cases referred to, indicates that there is no special tendency for infants more than older children or adults to manifest the disease in this way.

In one instance, of a child of nine months, it appeared likely that some member of the family was a typhoid carrier with a chronic infection. Another case illustrates well how careful we must be in every detail to insure that typhoid fever germs shall not be disseminated. This, too, was in an infant of nine months with a very typical attack of typhoid fever. She was bottle-fed with unusually good certified milk from one of the best inspected dairies of Philadelphia. Not content with this, the mother used distilled water in preparing the food, and pasteurized the mixture. No one in the house had been a recent subject of the disease or had been in conscious contact with it. The only weak link was the habit of the mother of washing the child's mouth with the river water from the tap, and in this way, I believe, the disease was contracted. In another instance where every other possible precaution appeared to have been taken, the mother allowed the rubber nipples, previously boiled, to lie in a glass of unboiled river water. I may say that this occurred some years ago, before the present system of filtration of the water supply was established in Philadelphia and when infection from contaminated water was occurring constantly. In still another case in a child of eighteen months, living in a suburb of Philadelphia, the physician in charge could at first hardly credit the diagnosis, since there was, as far as he knew, no other case of the disease in the entire neighborhood, and the infant had not been away from home.

This is all that need be said in this connection about etiology. It may be summed up in a few words. However young the children, and however impossible it seems that typhoid fever could have been contracted, it is to be remembered that the chance often exists without our knowledge, and that no one thing is too small to be considered in the search for the method of infection.

For convenience of study we may divide the disease into three classes: 1. Typhoid fever in the infant; 2, typhoid fever in early childhood (two to six years of age); and, 3, typhoid fever in later childhood. The division is of importance because the symptoms, course, and prognosis vary with the three different periods of life. This remark applies, of course, to average cases only. Numerous exceptions are naturally to be found.

1. *Typhoid fever in infancy.*—Taken as a rule, the onset at this period of life is decidedly shorter than later. It may be roughly stated as lasting from three to four days before the fully developed attack is reached, this being marked by the appearance of roseola or by the fever reaching its height. Indeed in about one

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[1]Archives of Pediatrics, August, 1912.

third of the cases the onset may be called sudden. The temperature rises rapidly and is often at its height when medical aid is first invoked. There is rarely seen the steplike rise of the adult type. Vomiting is a frequent early symptom and in some cases is very troublesome; while diarrhea is oftener observed than at later periods of life, and is probably more frequent than constipation. Cough is not a very common early symptom nor is abdominal distention. Loss of appetite is frequent; nose bleed is uncommon; there is not much prostration. Convulsions are rare, and an onset simulating meningitis is very unusual.

As regards the symptoms present after the attack has reached its height, it is to be noted that vomiting is comparatively frequent; diarrhea continues to be oftener seen than constipation; coating of the tongue is common, but dryness and fissuring are very exceptional; there is not much loss of appetite, this depending perhaps upon the presence of thirst; abdominal distention is frequent but not troublesome. Of respiratory symptoms, cough dependent upon a bronchitis is perhaps that oftenest seen, but is seldom a matter of moment, and certainly less common than in adults. Epistaxis does not often occur now or at any time in infants with typhoid fever. The pulse maintains its strength except in the severer cases. Nervous symptoms of the nature of depression are not at all a prominent feature in infancy. It is noteworthy, for instance, how comparatively uncommon are such nervous manifestations as decided dullness, apathy, or unconsciousness; and it is only in the severer cases that there is marked prostration. On the other hand, the manifestations of nervous excitation are oftener seen at this time than later, these being irritability, fretfulness, and crying. They are, however, seldom sufficiently severe to be a matter of importance; convulsions, for instance, being observed only infrequently.

Roseola is perhaps as frequently seen in infancy as later, and, as far as this can be determined accurately, tends to appear earlier in the attack, oftenest somewhere from the fourth to the sixth day; and the same is true of splenic enlargement; all this being in accord with the shortness of the onset to which I have referred. The condition of the blood is interesting at this time of life, not forgetting that the number of leucocytes per c. mm. is naturally higher in infancy than later. Allowing for this difference, we find an absence of leucocytosis as characteristic a symptom of typhoid fever at this time as in adult life. The Widal agglutinative reaction is as common and characteristic now as later.

The temperature curve and the duration of the disease in infancy are interesting. The temperature is not characteristic and many variations are witnessed. After the rapid rise seen in the onset, it may continue elevated from 103 to 105° F., little influenced by bathing, for a week or more; then becoming more prone to be irregular. In other very numerous cases the temperature is very irregular throughout. The final fall of temperature is often rapid, almost by crisis in many instances; while in others it is slower.

The fall is always, however, more rapid than in adult patients, lasting only three to four days and being without the evening rise and morning fall seen in later years. The total duration of the attack is three weeks or less. In a large number it does not exceed two weeks; this being true in one-third of the seventy-five cases in my report already referred to.

2. *Typhoid fever in early childhood.*—I have dwelt at some length upon the symptoms of typhoid fever in infancy because they are more important and often less understood. The disease occurring in early childhood, that is from the end of infancy up to the age of six years, needs less detailed description. It is now that one expects the attack to run its mildest course. The onset is not so sudden as in very many cases in infancy, but nevertheless is often short and abrupt. The attack may occasionally be ushered in by convulsions, or may exhibit in some instances for a few days meningitic symptoms which are very confusing in diagnosis. In more cases, however, the onset is remarkably insidious, with symptoms so little marked that nothing of importance is suspected until, perhaps, the roseola and enlarged spleen are found. It is thus frequently difficult to determine when the attack commenced.

In the eruptive stage there is generally an absence of the evidences of the typhoid state so common in adults. Nervous symptoms are little marked; there being at most, as a rule, only a certain degree of apathy, with, perhaps, slight nocturnal delirium. Diarrhea is less frequent than in either infancy or later childhood. Dryness of the tongue is rare. Vomiting is more common than in adults. Abdominal distention is seldom troublesome. The temperature is more suggestive of typhoid fever than in infancy; but the third stage is always short and without any remittent character. The total duration of the disease may be put at two to three weeks.

Complications are not frequent. To all this there are, of course, numerous exceptions; and I have known typhoid fever at this time of life to be very severe.

3. *Typhoid fever in later childhood.*—In later childhood, after the age of six years, the disease gradually approaches the adult type more and more as puberty is approached. This is especially true after the age of ten years. Diarrhea is now often troublesome, the result of the greater degree of intestinal ulceration present at this time of life. Hemorrhage and perforation are more liable to occur than earlier. The symptoms of the typhoid state are more likely to develop, yet not to the extent seen in adult life, and only in severe cases. The course is longer than before; frequently equalling the ordinary four weeks of the adult; and the temperature of the third stage has often more of the remittent type.

Complications.—A few words more in detail regarding some of the complications of typhoid fever in early life: Bronchitis is so common that it may be called a symptom of the disease. I have seldom, however, found it severe. Pneumonia is, perhaps, less frequent than in adults. I have seen severe laryngitis make a child aphonic for weeks; and rarely perichondritis of the larynx or ulceration occurs, with stenosis. The circulatory apparatus usually shows few complications. A hemorrhagic tendency, with purpura and the like, is very uncommon in infancy and childhood. I have seen epistaxis so severe that it could, with reason, be called the cause of death; but this is certainly very rare; and epistaxis either in the onset or later is not as frequent as in adults. Noma, although uncommon, is more likely to occur after typhoid fever than after any other affection except measles. I have come across a number of cases of this shocking condition. Severe diarrhea is not infrequent in later childhood; and may be troublesome in infancy. Intestinal hemorrhage is certainly much less often seen than in adult life. Cortinesca reports it twenty-two times in 762 cases of typhoid fever in children. My own experience, however, would make it more frequent in later childhood than these figures show. I have even observed severe hemorrhage in an infant of five months. Intestinal perforation is usually considered very uncommon, and is indeed so, compared with the frequency seen in adults. Thus Henoch observed it but once in 381 cases. I have been unfortunate in having had ten cases, the youngest in a girl of four years. Generally, however, it occurs, if at all, only in later childhood. Nephritis is less often witnessed than in adult life and a true meningitis is very unusual, although meningitic symptoms are not infrequent, especially in the early stages of the disease in subjects past the age of infancy. The possibility of the occurrence of other infectious diseases as complications is not to be forgotten. I have observed, among other diseases, scarlet fever, measles, diphtheria, and cerebrospinal fever respectively, associated with an attack of typhoid fever.

Relapse is certainly as frequent as, and perhaps even more so than in adult life. I have the records of one child of three and one-half years with three relapses. Youth does not militate against the occurrence, and I recall one instance in a girl infant of nine months.

Regarding the question of prognosis it may be stated that on the whole the prognosis in early life is good. The statistics published vary considerably, with a death rate even as low as one per cent. Of 432 patients in the Children's Hospital of Philadelphia during fourteen years, twenty-three died, i. e., a mortality of 5.32 per cent. In Morse's 284 collected cases in children, the mortality was six per cent. against 13.5 per cent. in 3,396 adult cases. The age of the child has a distinct bearing on the mortality. In the first two and one-half years of life the death rate is comparatively high. Thus in 278 published cases collected by Ostheimer and myself,[2] the mortality was fifty-one per cent. This is not a representative figure in all respects, since doubtless many milder cases of the disease were unrecognized, or, if recognized, were not considered worthy of publication. In the seventy-five cases of my own report the mortality was 16 per cent. The mortality is at its lowest in early childhood probably not exceeding two to four per cent. It increases as puberty is approached.

Diagnosis.—The diagnosis presents many difficulties, especially in infancy. It rests upon the presence of a continued fever without other discoverable cause; the absence of leucocytosis; the presence of rose spots and enlarged spleen, and of the agglutinative reaction; and sometimes the occurrence in family outbreaks. With this association an error in diagnosis is hardly possible. In more obscure cases the diagnosis should rest especially upon the obtaining of a positive agglutinative reaction, although the absence of this by no means excludes the presence of typhoid fever. A low leucocyte count is a diagnostic symptom of great importance; but a high count does not exclude typhoid fever,

[2]American Jour. Med. Sciences, Nov., 1902.

since there may be some complicating inflammation present.

Most difficult in infancy is the diagnosis from ileocolitis. The presumption is always in favor of the latter disease, since it is so many times the more common; but presumptive evidence is no evidence at all for the individual case. Both diseases show diarrhea, often tympanites, some fever, and perhaps enlargement of the spleen. There is generally a leucocytosis in ileocolitis and the disturbance of the bowels is more severe, but only watching the course of the case and especially the discovery of rose spots and a positive agglutinative serum reaction can make the diagnosis of typhoid fever certain.

Another disease causing great diagnostic difficulty at any period of childhood is acute miliary tuberculosis. I have repeatedly been unable for a considerable time to come to a conclusion. This disease exhibits a low leucocyte count; enlargement of the spleen; continued fever; and no discoverable lesion to account for the symptoms. The cutaneous tuberculin reaction cannot be depended upon in this condition. As the disease advances all doubt is removed by the continued absence of rose spots and agglutinative reaction; the persistence of fever over too long a period; and, finally, the development of distinct localizing symptoms of tuberculosis in some part of the body, often the meninges.

Still another diagnostic difficulty is the existence of continued fever depending upon influenza or some influenzalike condition, or upon an intestinal autointoxication. Apart from the development of rose spots and the positive Widal reaction, there is nothing but time which will permit of reaching a conclusion probably correct.

Treatment.—Our first treatment of typhoid fever is prophylactic and the nature of this follows from the nature of the causes as described. Attention to the small details is the keynote. The source of the milk supply should be known and watched. Pasteurizing or sterilizing is certainly to be employed when typhoid fever is prevalent or when the conditions of the dairy from which the milk comes are unknown. Equally important is the use of water which is above suspicion; and when such cannot be obtained, all water used for drinking, bathing, washing of vegetables, and the like should be boiled; and this also applies in infancy to the washing of bottles and rubber nipples. At any age one must remember the uselessness of care in this direction if unboiled water is used for washing the mouth either with a cloth or a toothbrush. In older subjects the ingestion of uncooked vegetables, such as celery, lettuce, turnips, radishes, and the like, which have been fertilized with human manure, is certainly a not infrequent cause of typhoid fever; while infection by raw oysters is a well known source of the disease. When typhoid fever is prevalent, the employment of preventive inoculation, as recommended by Wright and others, is worthy of serious consideration. It has proved undoubtedly useful in army practice, and has been successfully employed to some extent in civil life.

If there is a case of typhoid fever in the house, the greatest precautions should be taken to prevent the extension of the disease. This is to be accomplished by strict disinfection of the bed clothing, body clothing, urine, and feces of the patient, and of the hands of the attendants.

For the treatment of the attack at any age, the therapy is to be purely expectant. Few of us have any faith nowadays in the value of efforts to disinfect the intestinal tract in the hope of preventing resorption of germs. In all cases, but especially in children, where the degree of mortality is less, the great principle of treatment should be *non nocere*. If you cannot do good, at least do no harm. Overtreatment is a widespread evil, and drugs are given to combat every individual symptom. This is entirely wrong. Rest in bed is imperative even in the mildest cases. The diet should be light and digestible, and above all sufficient. The wasting and weakness seen after recovery from typhoid fever are often purely the result of starvation. Four ounces of milk every three hours is not sufficient for any child in a disease as long continued as typhoid fever. Much has been said of the danger of milk through the production of tympanites and an increase in the severity of the general symptoms. I may fairly claim a large experience in typhoid fever in children, and I may say that I have found no ground whatever for this belief. Milk may sometimes produce tympanites, but so may the carbohydrates or any other food. This does not in any way mean that milk should of necessity be the only article of diet, although it is often the best. Frequently more concentrated nourishment is required, such as cereal porridges of different sorts, except oatmeal if there is diarrhea; junket; rice pudding; milk toast, and broth. As regards broth, it is important to bear in mind that a clear broth has practically no nutritive value. As I often tell parents, the value of a broth as food depends upon what you *put into it*, not on the broth itself. Rice, barley, or

other starchy substance in considerable amount should be added before use; and the broth should be prepared in such a way that the meat fiber is left in it in a finely divided state. Drinking water should be given freely in all cases except where a child is willing to take water but nothing else. Here the refusal of water will often force the patient to take milk for the sake of quenching his thirst. Rest of mind is as important as that of the body; and the opportunity for plenty of sleep should be given. Here comes into consideration the advisability of waking a child for the sake of giving food or medicine. Every case is a rule to itself; but undoubtedly in many instances the allowing of a certain irregularity in the administration of nourishment or of medicine or treatment of any kind is advisable in order not to disturb a refreshing sleep. This applies, of course, less to the very severe cases, where the greatest regularity may be necessary.

As regards the treatment of fever, it is well known that high temperature of short duration is generally well borne by children. In typhoid fever, however, the course is longer and the fever in itself exhausting, and often accompanied by nervous symptoms. Efforts should consequently be made to keep the temperature within reasonable bounds. Sponging with cold water may be employed for this purpose; but to do any good it must be continued for at least fifteen minutes. This is often disagreeable to the child, and is productive of crying with consequent excitement and fatigue. In most cases, therefore, the warm tub bath at a temperature of 98° to 100° F. is much to be preferred. Friction of the body should be given while the child is in the bath as in the ordinary Brandt method and the head kept cool by an ice bag or cold wet cloths; but early in life the true cold or cool bath is usually not at all well borne. Indeed, even the warm tub bath not infrequently is followed by increased rapidity and weakness of the pulse with imperfect reaction and cyanosis. In such cases it is best to abandon it altogether. Always to be remembered is that it is not so much the reduction of the temperature which is sought for by the use of the bath, as the allaying of nervous symptoms and the improvement of the general condition. If this improvement is not obtained, hydrotherapy is of little value. It should never be employed as a routine measure.

Sometimes in place of the bath the cold pack is efficient and disturbs the child but little. In other cases, the continued application of an ice bag to the abdomen is useful, the skin being protected by one or more layers of toweling. In exceptional cases, where hydrotherapy is not well tolcrated, good effects, both on the temperature and the nervous symptoms, follow the repeated administration of small doses of the coaltar antipyretics. I have no such fear of these as possesses many physicians; but I seldom find them necessary.

The milder and even the average cases require practically no internal medication. Spiritus ætheris nitrosi or some such febrifuge may be prescribed in private practice to relieve the mind of the mother, inasmuch as it is harmless to the child; but it has little other effect. In the severe cases, or in any patient who is beginning to show the debilitating effect of the disease, moderate doses of alcoholic stimulants are, in my opinion, of great benefit as a conserver of energy. The indication for these consists in prostration, weakness of the pulse, nervous exhaustion, and impairment of the first sound of the heart. It is not always well, however, to wait for these, since it is far easier to maintain a fair condition of the circulation by moderate stimulation than it is to revive it if it has commenced to fail. While, therefore, being far from recommending alcohol in every case, I feel that the opposition to it in certain quarters is worse than not well founded; it actually militates against the patient's recovery. Severe cases of cardiac weakness are best treated with digitalis; and, in emergency, camphor and caffeine hypodermically. Of strychnine I make little use in typhoid fever in children. It has often seemed to me to produce symptoms of excitation, and I believe it to be much overrated in cardiac weakness in this or other debilitating diseases.

Vomiting seldom requires treatment. The replacement of other food by weak broths, cereal decoctions and albumin water may be employed for a short period; while at the same time any drug capable of producing the symptom, such as digitalis, is withdrawn and any medication necessary given hypodermically. Although tympanites is not infrequent in infancy and in later childhood, it is not often sufficiently distressing to demand relief. Turpentine stupes, the rectal injection of asafetida or the employment of the rectal tube is frequently of benefit. Diarrhea, if of moderate degree, say four to five stools in twenty-four hours, hardly needs treatment. If the stools are more numerous, or are large and watery, they may usually be checked by the administration of some astringent or of a small amount of opium. One must not, however, lose sight of the tendency of the latter drug to produce tympanitic disten-

tion. Constipation is often present and is then better treated by local measures than by purgatives. Of course, all injections must be given with great gentleness.

Nervous symptoms at times require treatment, but not as often as later in life. Delirium, stupor, great restlessness, headache and the like, as seen at times in later childhood, if associated with high temperature are often benefited by hydrotherapy. In other cases small repeated doses of the bromides or of antipyrine are serviceable. A warm evening bath may give a quiet night.

As to the therapy of complications and sequels, I need not speak in detail. They require the treatment appropriate to them. Regarding convalescence, apart from the frequent need of iron and other tonics and of change of air, there is one matter to be emphasized pertaining to that final stage of typhoid fever, in which, in reality, convalescence may be said to have begun. It not infrequently happens that after typhoid fever has run its course, and all other symptoms have disappeared, there still continues an irregular febrile temperature of moderate degree, perhaps about 100° or sometimes a little over this, even reaching at times, it may be, 101° F. After careful search has excluded all complications, such patients are frequently benefited by getting them out of bed. I have repeatedly seen this course followed by cessation of all febrile reaction; and conversely I have known children to be kept in bed on account of this slight febrile curve, long after rest in bed was doing them only harm. The same is true of the slow, irregular pulse not infrequently observed in the early part of convalescence, after the temperature has reached normal. Children are sometimes confined to bed indefinitely on the ground that this condition is a sign of myocardial change or other affection of the heart. As a rule, this is not so, and getting the children out of bed cautiously will generally cause the irregularity to disappear. None of this, of course, means that a child should be taken from bed immediately on the cessation of fever. Such a procedure, or the submitting the patient to any other excitement or exertion, may at this stage produce an exacerbation of fever.

1810 Spruce Street.

Varicella:

Ichthyolis	5jss
Acidi Carbolici	grn. v
Lanum	5iij
Petrolati	ad 5j

M. F. ung.

Sig.: Apply on lint once daily after crusts have formed.

OIL-ETHER COLONIC ANESTHESIA*

By J. T. Gwathmey, M.D., of New York

Any new method of anesthesia must be placed in immediate competition and comparison with the best methods of to-day. Certainly, no one method (or anesthetic) will ever replace all others. However, if it finds a permanent place of usefulness it has accomplished all that may reasonably be expected. Is oil-ether colonic anesthesia worthy of such a place?

Luke, using an imperfect technique, as shown by the tardy recovery of his patient, after three cases, offers many theoretical objections to the method, and reports the first death attributable in a measure to the anesthetic.

Let us study this case. "A fairly vigorous man of about fifty years; never really recovered from the anesthetic, and was in a most profound state of narcosis for nearly six hours. Six ounces of ether and two ounces of olive oil were administered in the usual manner, and both before and after the operation was completed the colon was repeatedly irrigated without apparent benefit. Operation, jaw resection. Patient died with an aspiration type of pneumonia twenty-two hours after operation."

The technique, as outlined, was faulty, inasmuch as no mention is made of chloretone or some other hypnotic (in addition to the hypodermic of morphine), which I have mentioned in every article I have written upon the subject. The object of the chloretone solution is two-fold: (1) It diminishes the amount of oil-ether solution required; (2) it assists materially in gauging the susceptibility of the patient to this particular form of anesthesia.

The fact that "the colon was repeatedly irrigated without apparent benefit" indicates that too much of the anesthetic was given in the first place, and that the irrigation should have commenced even
the operation. As a last resort, an intravenous saline injection of about 1,000 to 2,000 Cc. should have been given.

When an aspiration pneumonia occurs, it is partly due to the assistant's not keeping a clear airway by sponging or using a suction apparatus.

Eight ounces of a 75 per cent. solution of ether in oil will keep a patient weighing 160 pounds or over in surgical anesthesia for three hours, and no longer, provided a clear airway is maintained. This has been demonstrated repeatedly, twice in my own practice. A "six-hour profound narcosis" indicated an overdose or imperfect airway, or both.

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*Med. Record, Oct. 3, 1914.

It would be unfortunate if any one should be misled by theoretical considerations based upon faulty technique. The theoretical objections can best be answered by saying that the fundamental principles have been thoroughly worked out, both upon animals and in chemical laboratories, and, finally, in the Bureau of Laboratories of the Department of Health of New York City.

In order to determine the therapeutic value of oil-ether in ophthalmology, rhinology, dermatology, and other branches of medicine, tests are now being conducted by distinguished clinicians. Results will be reported later.

Clinical Findings.—The fundamental principles enunciated above have been carried out in over 500 cases in the New York Post-Graduate Hospital, People's Hospital, Columbus Hospital, Smith Infirmary, and by Drs. Foote, Meeker, Lumbard, Arrowsmith, Cantle, and myself, besides many others.

Condensing the experience gained from these 500 cases, it may be stated positively that:

1. This method compares favorably with any other method of administering ether, when the proper technique is employed.

2. The experience already gained justifies a continuation of the method.

3. The limits of safety are wider than with any other method, as shown by the difference between the dosage for surgical narcosis and for toxemia. This is well illustrated by the case of a patient who received four times the required amount of preliminary medication and two-thirds more of the mixture than is necessary, as we now know it, yet made an uneventful recovery.

The preparation of the patient is not different from the ordinary technique, with the exception of an irrigation until the return is clear, on the morning of the operation. Some surgeons employ this method whether rectal anesthesia is used or not.

The crux of the present situation resolves itself into the following proposition: Is there any class of patients whose lives are better safeguarded by the employment of oil-ether anesthesia? This can be answered emphatically in the affirmative.

It is *especially* indicated in the *very obese*. Here any inhalation method is attended with risk; spinal and local anesthesia are difficult; intravenous anesthesia is less objectionable than the others named, but is not so easy of application as with other patients. With rectal anesthesia, however, these patients go to sleep like babies and wake up as from a natural sleep. In every instance with this class of patients the nausea is negligible. This is well illustrated by the following cases:

Case 1.—A patient weighing 250 pounds, in the Massachusetts General Hospital of Boston. In this case, Dr. Allen, the anesthetist, stated that he dreaded giving the patient any inhalation anesthetic.

Case 2.—A patient weighing 240 pounds, in the New York Hospital for Ruptured and Crippled, operated upon by Dr. Walker, Drs. Coley and Gibney being present.

In both these cases the operation was for umbilical hernia. Relaxation was perfect, and the anesthesia was all that could be disired.

Case 3.—A private patient operated upon by Dr. Forbes Hawkes, the patient weighing between two and three hundred pounds. As in all private cases, the nurses preceded us and followed our directions in regard to administration, our duty being to supplement, withdraw, deepen, or lighten the anesthetic according to the indications. The result, as in the other cases, was ideal.

Many similar cases could be cited, but these should be sufficient.

Another class in which this method is especially indicated is composed of neurotics and those in whom the psychic element predominates. Two illustrations will suffice for this class.

Case 4.—An insane patient was brought to New York City for a surgical operation. The possibilities of trouble were very great, if the patient became aware of the proposed operation. A nurse administered the mixture, as directed; the patient fell asleep quietly, was placed upon the operating table, the operation was successfully performed, and the patient returned to bed without ever seeing a doctor.

Case 5.—A boy, eight years of age, fell upon the ice and broke his arm. He was highly wrought up over the occurrence. In this instance, the surgeon, Dr. Harold Meeker, gave the mixture to the mother of the child who administered it to the little patient while he was lying on a sofa, the surgeon being in the next room. The child had no preliminary medication or preparation. He dropped to sleep quietly, the anesthesia being entirely satisfactory.

Dr. Arrowsmith of the Brooklyn Eye and Ear Hospital reports fifty cases, ten of which were esophagoscopies. He considers the method ideal for this class of work.

Undoubtedly, deaths will occur with this method as with all others if administered when contraindicted, or with faulty technique, and in fairness it should not be administered in borderline cases unless the physiology is thoroughly understood.

The anesthesia is completely under control at all times. If a lightening of the anesthesia is desired, a Connell breathing tube will give the necessary dilution of air. If the anesthesia is too light, a towel placed over the mouth and nose of the patient will deepen it. If the patient shows undue

susceptibility to the ether, part or all of the mixture can be withdrawn immediately, if necessary, or at any time later. The *judgment* of the anesthetist as to the proper amount, in the first place, and if this be faulty, its immediate correction, etc., by the addition or withdrawal of the mixture, is the principal factor in making this a perfectly safe method.

The following cases from the Mary Gates Hospital, Port Arthur, Texas, will illustrate this idea. All three were borderline cases, and the anesthesia was a problem.

Case 6.—Female, weight less than one hundred pounds, incomplete abortion of three weeks' standing; pulse 150. As a preliminary, morphine, grn. ⅛, atropine, grn. 1/150, chloretone, grn. 10; anesthetic, ether-oil, 75 per cent., oz. 4. Patient completely anesthetized in ten minutes. Patient did not vomit, and three hours after the operation asked when the doctor was coming to operate. Left the hospital four days later.

Case 7.—Woman, weight 70 pounds; panhysterectomy. Morphine, grn. ⅛; atropine, grn. 1/150; chloretone, grn. 10; anesthetic, ether-oil, 75 per cent., oz. 4. Was not under the influence of the anesthetic in twenty minutes, so was given two ounces additional, and in five minutes was completely anesthetized. When brought into the operating room the patient was too deeply narcotized, so two ounces were siphoned off. The operation lasted two hours and forty-five minutes. In coming out the respirations were unsatisfactory, and patient was given, by hypodermic, cocaine, ½ grn. Patient did not vomit nor ask for water and made an uneventful recovery.

Case 8.—Female, weighing 165 pounds. Operation for gallstones. Almost imperceptible pulse. Preliminary: Morphine, grn. ¼; atropine, grn. 1/150; chloretone, grn. 10; anesthetic, ether-oil, 75 per cent., oz. 8. Pulse improved immediately. After establishing ether tension, the patient seemed a little too deeply under, so three ounces were siphoned off before the operation began; supplemented with chloroform when operating on gallbladder. Operation lasted one hour and thirty minutes. Patient reacted immediately upon irrigation, and made an uneventful recovery, without vomiting.

The anesthetist should know that with this special form of anesthesia the breathing is quiet, *as in natural sleep;* the reflexes, especially the lid reflex, may be quite active, and yet the patient be in a state of deep surgical anesthesia. Cyanosis and stertor should be checked by the use of a breathing tube. We would further suggest that previous articles on this subject be carefully read before one attempts this method of anesthesia.

With these suggestions in mind, we have no hesitation in submitting an abstract of the technique, by Dr. Charles Gordon Heyd, former resident house surgeon, New York Post-Graduate Medical School and Hospital, for the benefit of those who may wish to use this method.

I. Preparation of Patient.—(*a*) A mild laxative the night before operation, avoiding all purging. On the following morning an ordinary "soap-suds" enema is given to assist the evacuation of the bowels. (*b*) Irrigation of the colon until the return is clear, three hours before the operation.

II. Indications.—(*a*) Especially indicated where the element of fear is in evidence, as in goiter cases. (*b*) In the very obese. (*c*) Bronchoscopy and gastroscopy. (*d*) All operations upon the respiratory tract, head, neck, and chest.

III. Contraindications.—(*a*) Whenever ether is contraindicated, *except* where the patient had been ill from a previous administration. In these cases it can be given with impunity. It can also be given in bronchitis, asthma, etc. (*b*) Pathological conditions of the lower bowel, colitis, hemorrhoids, fistula, etc. (*c*) When the patient complains of considerable rectal pain upon the introduction of the oil-ether solution.

IV. Apparatus.—(*a*) A small catheter and a funnel for the introduction of the oil-ether solution. (*b*) A Gwathmey rectal tube with which to flush or withdraw fluid from the rectum.

V. Administration.—(*a*) One hour before operation visitors should be excluded, the room darkened, and quiet maintained. The patient should not now be left alone. Then give per rectum: Chloretone, grn. 5-20; ether and oil, āā. dr. 2-4. Or a suppository: Chloretone, grn. 5-20, or some hypnotic of equal value.

(*b*) Half an hour before operation, by hypodermic injection: Morphine, grn. ⅛ to ¼; atropine, grn. 1/200 to 1/100.

(*c*) Twenty minutes before operation, give the oil-ether as follows: (1) Mixture for adults, olive oil, oz. 2; ether, oz. 6. (2) Mixture for weak, anemic patients, olive oil, 45-35 per cent.; ether, 55-65 per cent. (3) Mixture for children, ether-oil, 50 per cent.

Patient in bed in the Sims position. The catheter is well lubricated and inserted 4 inches within the rectum. The mixture is poured slowly into the funnel, at least five minutes being consumed in its introduction. Introduce one ounce of oil-ether solution for every twenty pounds of body weight, except for obese persons. The eight ounces should never be exceeded with any patient. *If patient goes to sleep before required amount is given, stop.*

VI. Danger Signals.—(*a*) *Loss of lid reflex.* (*b*) *Stertor or embarrassed respiration.* (*c*) *Approaching cyanosis.*

If any of the above signs are present, immediately withdraw two or three ounces

of the mixture from the rectum. If the breathing is regular, with reflexes active, the patient will be relaxed and in surgical narcosis.

VII. Post-operative.—Immediate irrigation of the rectum with cold soap-suds, at the same time massaging the colon quietly from right to left, thus expelling any liquid which may be left. Then introduce two to four ounces of olive oil and one pint to one quart of cold water. Withdraw tube from rectum.

Further after-treatment, the same as after other forms of anesthesia.

Latest Technique.—Recently the technique has been still further improved by diminishing the amount of the oil-ether mixture one-third to one-half. This has been accomplished by using paraldehyde as the preliminary. Paraldehyde has been employed as an hypnotic in many hundreds of thousands of cases in insane institutions and general hospitals. When employed in connection with ether it intensifies the action of the anesthetic, giving more complete relaxation without in any way affecting the pulse or respiration.

The prescription for this preliminary is as follows: Morphine alkaloid, grn. ⅛; paraldehyde, dr. 1; ether and olive oil, āā. dr. 3½.

This one-ounce solution should be administered per rectum one hour before the operation instead of the chloretone. When this preliminary is given, the technique as outlined above should be followed, except that instead of a hypodermic this dose should be repeated for athletes, alcoholics, and patients weighing over 160 pounds. For the average patient do not repeat the dose.

One dram of paraldehyde used in this way is equivalent in anesthetic value to two ounces of a 75 per cent. oil-ether mixture. We now give six ounces of the oil-ether mixture where we formerly used eight. When the paraldehyde is repeated, for the cases mentioned, we give four ounces instead of eight. This procedure is so satisfactory that we never use more than two drams of paraldehyde for any patient. This paraldehyde mixture, when used as a preliminary to nitrous oxide and oxygen, renders any further addition of ether by inhalation unnecessary; gives a greater relaxation, and the ether and paraldehyde are not noticeable to the patient.

Spasmodic Laryngitis:

Tinct. Aconiti.....♏ viij
Syr. Ipecacuanhæ.....f. ℥jss
Tinct. Opii Camphoratæ.....f. ℥iij
Liq. Potassii Citratis.....ad f. ℥iij
M. Sig.: One teaspoonful every hour or two.

TREATMENT OF PELLAGRA

Carl Voegtlin presents the treatment of pellagra from the point of view of the pharmacologist and the biochemist. Both are necessary, he says, for a clear understanding of the processes of nutrition and metabolism. He remarks that in the milder cases of this disease the symptoms will almost all disappear in a relatively short time if the patients are kept at rest on a liberal mixed diet with plenty of fresh meat. The difficulty lies in the fact that pellagrins are usually mentally defective and refuse to follow the directions of the physician unless convinced of its absolute necessity to their recovery. Consequently, psychotherapeutic methods must also be used to succeed with the dietary treatment.

Relapses have been known to occur after patients have been exposed to the same conditions which caused the disease to be contracted primarily. The diet should not be reduced in case of diarrhea, and constipation is affected favorably by increasing the fats in the diet. As to the treatment by drugs, he remarks that Lombroso advocated arsenic as a specific in this disease, but in this country it has not met with such good results and its benefits have been denied. He calls attention to the fraudulent advertising of proprietary pellagra medicines throughout the South, these preparations being without any real value in the treatment. The patient must be cautioned to keep out of bright sunlight as much as possible. Voegtlin believes that this disease is caused by a chronic intoxication produced by certain vegetable foods used to the extent of a dietary deficiency. In experiments with animals, fed on an exclusive diet of corn, carrots, sweet potatoes, etc., he found that they developed in three or four days, gastro-intestinal symptoms indicating an intoxication and resulting in death in a remarkably short time. Extracts of these vegetable products, fed or injected into these animals, produced the same symptoms.

It was discovered that relatively large amounts of aluminum compounds were present in these vegetable products. Toxic effects from these salts have been observed in both man and animals. Lessening the amount of vegetables ingested and adding eggs and meat to the diet relieves the injurious action of the vegetables on the alimentary canal. Voegtlin summarizes the causative elements in this disease as follows: A deficiency or absence of certain vitamins in the diet; the toxic effect of some such substance as aluminum, occurring in certain vegetables; a deficiency of the diet in certain amino-acids.—Jour. A. M. A.

Progress in Materia Medica and Therapeutics

ARSENIC AND IODINE IN ARTERIOSCLEROSIS

In an article on the prognosis of arteriosclerotic cardiac conditions, G. Klemperer, of Berlin, also refers to the therapeutic possibilities. In his opinion, rest and a careful mode of life are the fundaments of all treatment. Luckily the majority of arteriosclerotic patients are in good circumstances and therefore able to follow the physician's advice in this respect.

Klemperer strongly believes in the iodides and prescribes them regularly. He also advocates the use of arsenic, because he has often observed the value of this drug in the headache, dizziness and sensations of fear, associated with arterial disease as well as for controlling subjective cardiac symptoms. Arsenic is also of value objectively, as it frequently reduces blood pressure. He believes that arsenic and the iodides, administered alternately, are an aid in improving the prognosis of arteriosclerotic heart affections.—Theropie der Gegenwart, No. 7, 1914.

BROMODERMA OF THE LEG

An unusual case of papulo-vesicular bromoderma of the leg is reported by L. Weiss, of New York. He discusses the action of the bromides and the etiology of the drug eruptions generally. The best evidence, he says, that drug eruptions are of an angioneurotic character caused by functional disturbances of vasomotor nerves is the fact that they simulate other exanthems known to be of angioneurotic origin, and that fever, and in most systemic disturbances, are generally absent or are present only in a mild degree. The patient whose case he reports was a woman twenty-four years old, who had been taking bromides during the winter months, but more frequently during the summer, though the eruption was worse during the cold weather. His conclusions from the study of this case and of the literature and the subject generally are: "1. Drug eruptions may simulate almost any known skin affection. 2. A skin eruption starting suddenly without any prodromal symptoms is almost sure to be a medicinal eruption. 3. The violence of development and the preponderance of the local over the systemic disturbances are characteristic of drug eruptions. 4. The brevity of the acute stage and the quickness of defervescence constitute a notable asset in diagnosis. 5. The usual four stages of the acute contagious exanthems, namely, the prodromal stage, the eruptive, the fully developed and retrogressive and the desquamative stage are wanting. 6. The temperature never rises to the point shown by the acute exanthems and the affection of the mucous membrane is never so severe."—Jour. A. M. A., Aug. 22, 1914.

THYROID DEFICIENCY

At a lecture delivered at the New York Polyclinic Medical School and Hospital, April 14, 1914, E. Hertoghe, of Antwerp, Belgium, drew attention to certain mild forms of myxedema which frequently escape the attention of physicians. After pointing out the very intimate relation of the thyroid secretion to the various cellular structures of the body the author asserts that infiltration is the constant lesion of thyroid deficiency. It may be slight, but is always present. If a patient swollen with this special edema, takes thyroid extract he immediately eliminates a great quantity of urine and urea. He loses in weight, the cellular waste matter is carried away, and when he has got rid of the whole residual stock he will lose no more, even though he be given much larger doses. Infectious diseases, especially of early age, tax heavily the vitality of the thyroid gland. As illustrating this fact, Hertoghe exhibited photographs of three cases of thyroid weakness resulting respectively from syphilis, paludism, and tuberculosis. Another series of photographs show the remarkable improvement in these patients following the administration of thyroidin.

Although in these cases there had been an arrest in growth both physically and mentally it may not be said that thyroid weakness is synonymous with cretinism, for incomplete forms will go very well with a fairly active and busy life, and some of the patients are very intelligent.

Considering the effect of thyroid insufficiency on the various tissues of the body the author states that the muscular infiltration shows itself subjectively by rheumatoid pains. Muscular contraction is delayed in onset and slow in execution. There is stiffness and dread of movement. The nerve cell, whatever may be the de-

gree of myxedematous cachexia, is never destroyed as in a hemorrhagic focus or embolic necrosis. Its nutrition and excretion are hindered, it is infiltrated and at the same time compressed by the infiltration of its supporting tissues. The transmission of impulses is delayed but not abolished. Reflexes are sluggish. The discomfort is made manifest by neuralgias and shooting pains of a neuritic character. Other effects in well marked cases may be vertigo, noises in the ear, headache, loss of memory, confusion, depression, loss of balancing power and even coma. The effect of thyroidin in hastening union in bone fractures is well known. On cartilaginous tissue the most prominent symptom of thyroid weakness is crepitation and stiffness in the joints. The glandular tissues are also affected. The secreting of sweat for example, is completely abolished. The effect of undernourishment of the epidermis results in early desquamation and falling of the hair. The eyebrows are thinned especially at their outer thirds and the eyelashes are shed leaving the lids unprotected against the erosive action of tears and thus leading to a blepharitis. The baldness very constantly presents a special distribution, the hair being first shed in the frontal region, then on the nape of the neck, giving a characteristic appearance. The loss of the eyebrows gives the patient an appearance of perpetual astonishment. There may be eczema, psoriasis, and alopecia. The author has frequently seen an obstinate "milk crust" in infants rapidly yield to a few doses of thyroidin. Any of the mucous membranes may show evidence of infiltration and in severe cases the tongue is greatly swollen and tends to fall backward. Desquamated epithelium in the gall-bladder may become the nucleus of a calculus. The bladder constantly denuded of its epithelial lining is very sensitive to the irritating action of the urine. Many cases of nocturnal enuresis in children have been reported which have been cured by the administration of thyroidin.

A most constant symptom of myxedema is a lowering of the temperature. This may be due to the less active combustion of fats or to the infiltration of the heat regulating centers in the brain. The sudden rise in temperature following a large dose of thyroidin may be mistaken for fever. The myxedematous patient is in a state of habitual chilliness. The effect on the cardiorespiratory system is manifested chiefly by dyspnea and in some cases the condition may simulate an attack of asthma. This would explain the cases of asthma reported unexpectedly cured by thyroid extract.

The thyroid gland plays a most important part in the development of the sexual organs, especially in females. Absolute cretins never come to puberty. The uterus remains infantile and menstruation begins late. The posterior wall of the uterus may not grow as quickly as the anterior, resulting in retroflexion. The profuse menstrual bleeding so often attributed to the retroflexion is really caused by the infiltration of the uterine mucous lining, by the defective contractility of the uterine muscular cells and by the hemophiliac condition of the blood. In thyroid defect hemophilia is quite a classic symptom. Some women who at ordinary times have a decent supply of thyroid secretion, run short during the menses. Migraine is then a classic symptom. There may also be a muffled voice, due to temporary infiltration of the vocal chords, extreme lassitude, pains in the back and obstinate constipation.

In pregnancy the thyroid becomes enlarged and throws into the blood an unusually large quantity of secretion, thereby suspending menstruation and protecting the fertilized ovum. This action of the thyroid should be remembered in cases where chronic abortion has exhausted all other forms of medication. A great many women who have taken thyroid extract to reduce their obesity have been surprised at the promptness at which they have become pregnant. The thyroid extract also acts upon the mammary glands and increases the quantity of milk.

It is evident that the best way to understand mild myxedema is to have a clear conception of the more severe form. The more severe form, when properly treated, gradually progresses through the milder forms to become finally imperceptible even to the most experienced eye. So also, after successful treatment, a myxedematous patient, left to himself, gradually relapses, the milder symptoms being the first to return, followed by those of increasing severity, so that the disease reconstructs itself before our eyes. These symptoms of the milder form are precisely those, which the author insists we should most clearly impress upon our memory. The disease is usually hereditary and one must inquire carefully into the family history. In doubtful cases thyroidin forms the touchstone.

The author describes in most interesting fashion and in very great detail a number of striking cases that have been under his care. The case reports are accompanied

by a number of photographs, illustrating the symptoms described and showing the remarkable changes following thyroidin administration. In the following short paragraph he sums up the matter of diagnosis:

"When you encounter the association of one or more of the following symptoms: Trophic changes in hair, eyebrows, eyelashes, teeth, or gums; an habitual chilliness, biliary disturbances with lithiasis, dyspnea with asthmatic attacks; menorrhagia, recurring abortion, hemophilia, melancholia, depression, weariness of life, migraine, vertigo, sudden loss of consciousness, noises in the ears; somnolence, rheumatoid changes in the muscles, ligaments, or aponeuroses; nocturnal incontinence of urine, pollakiuria, loss of appetite and obstinate constipation—think of a possible deficiency of the thyroid secretion."

The theory of thyroid defect is based on the undoubted existence of an infiltration, the amount of which varies with the degree of deficiency, but which is always present. This theory agrees with all the known facts and is strongly supported by the complete restoration of the body as the result of treatment. There is no destruction of even the most delicate tissues, since all of them are capable of resuming their functions after the administration of thyroidin. The theory assists us in judging the progress of the patient and explains the various incidents which may be produced in the course of treatment. Thus, the too rapid absorption of the infiltration from the muscular, nervous, connective, or osseous tissue causes painful phenomena exactly similar to, but more acute than those experienced during the primary distention. Too intensive treatment produces violent headache, neuralgia, anginiform cardiac symptoms which are very likely to alarm both patient and physician.

In the treatment of myxedema, whether mild or severe, the author admonishes us to have the courage to be patient and proceed slowly, as it is unnecessary to cause the absorption of more than 3½ to 5 ounces of infiltration per day.

In adults a dose of 5 grains of thyroidin he states is quite sufficient, and even this small dose may produce disagreeable symptoms in connection with the heart, muscles and joints. Absorption of infiltration should be controlled by daily weighing of the patient. It is found that children tolerate thyroidin better than adults.

This fundamental treatment should be assisted by the observation of certain diatetic rules. Wine, beer, alcohol in every form, and also tobacco should be prohibited, because these toxic agents diminish the activity of the thyroid gland, and it is important to spare that of the patient, however much degenerated it may be.

Complete rest in bed is also useful during the first period of treatment, because when in bed the thyroid secretion of the patient is not expended in useless muscular action. Certain forms of mild thyroid defect derive benefit from the administration of small doses of arsenic, iodine, or bromine, because these substances form part of the thyroid secretion. Arsenic is of value in the forms associated with migraine, while a combination of iodine and bromine benefits the cases of incontinence of urine. A few doses of an active purgative may be required to clear the viscera when loaded after long-continued constipation. Cold bathing is absolutely forbidden, but hot baths are both useful and pleasant to the patient.

When the infiltration is absorbed, that is to say, when the patient no longer loses weight, one must endeavor to fix the dose of thyroidin necessary to maintain him in health. This varies from one to six tablets a week, the amount being slightly increased in winter and decreased in summer. When once the patient is cured one should not be alarmed to see him increase slightly in weight, as with the better assimilation an increase of stoutness is to be expected.

Finally, it may happen that a case of myxedema comes under observation so late that treatment seems hopeless, the patient having sunk into a state of complete coma, and death seems imminent. The author recently saw a woman in whom at times false respiratory movements occurred, giving the impression of Cheyne-Stokes breathing in a dying person. For several days two nurses took turns at her bedside in order to support her chin. A metal tube was inserted between her teeth and connected with a supply of oxygen, and at the same time thyroidin was administered by hypodermic injection. The symptoms rapidly improved, the periods of suspended respiration became less frequent, the somnolence disappeared, and the temperature rose considerably—an evident sign of the oxidation of the infiltration.

The author believes that just as we now search all our patients for tuberculosis, syphilis, alcoholism, a day will come when a systematic examination will also be made to ascertain their thyroid powers and defects.—Abstracted from the Medical Record, Sept. 19, 1914.

DIONIN AND ATROPINE IN SYPHILIS OF THE EYE

C. M. McCuiston, of Mt. Clemens, reports a case of syphilis in a boy seven years of age. He had typical Hutchinson teeth. The father's death followed syphilitic involvement of the brain. The mother is living; although she has had two abortions, shows no sign of syphilis. The boy showed no evidence of syphilis until two months ago when there was pain and swelling of the knees which the mother mistook for rheumatism.

When first seen the knees were badly swollen and one eye was inflamed, there being much congestion and opacity of the pupil and posterior-chamber. A solution of zinc sulphate in rose water was applied to the eye and mercury biniodide given internally. The following day the eye was worse, whereupon it was dusted with calomel. This was repeated the next day and for about a week alternated with the zinc sulphate lotion. Cloudiness increased and keratitis and adhesions developed. The author then instilled into each eye a solution of equal parts of dionin and atropine. The instillations were personally made three or four times a day and were followed by applying a 10 per cent. solution of argyrol. A change for the better was noted after a week of this treatment, then, for fear of some corneal opacity occurring the argyrol was stopped but the dionin continued. The corneal opacity and the keratitis cleared up and no adhesions remained.—American Jour. Clin. Med., Sept., 1914.

TREATMENT OF DIABETES WITH GOUT

Prof. C. von Noorden calls attention to the fact that diabetes is often complicated with gout and that if the diet indicated in both conditions is observed, there would be little left for the patients to eat. Fortunately, the combination of severe diabetes with severe gout is not common. Thus in the last twenty years, the author has seen less than a dozen cases. The rule is that the gout runs a mild, intermittent course and slowly disappears, while the diabetes is slowly progressive. A more serious feature, however, is the more pronounced tendency to complications, particularly affections of the heart, vessels, kidneys and eyes, and neuralgia and neuritis. The latter two are especially common and may be due both to the excess of uric acid and the excess of sugar in the blood and hence are especially severe if both these substances are present in the blood in undue amounts. As a rule, the gouty condition will be treated first with hot baths, hot packs, massage, electricity, hot air, light baths and other physical procedures; with salicylates, phenacetin and atophan and with a milk, egg, vegetable and fruit diet. Most physicians also instruct the patients to avoid dark meat and partake only of white meat. The author believes that it is much better to direct the treatment of these cases toward the diabetes, but at the same time to reduce the meat and to forbid altogether the alcohol and the internal organs, such as liver, sweetbreads, kidney and spleen. The glycosuria will rapidly disappear though the hyperglycemia will often persist much longer than in simple cases of diabetes. The neuralgia and neuritis can be checked in this way much more rapidly than by the other treatment. There is little danger that the gouty symptoms will increase or that nephritis, if present, will become worse. Later, the tolerance of the patient toward carbohydrates will be better and a less restricted diet will serve to keep the sugar out of the urine. More attention can then be paid to the gout. Thus, every two months, a purin-free diet is to be followed for about two weeks and during this time, the amount of carbohydrates is increased. When both affections are very severe an antidiabetic diet is alternated with an antigout diet every two weeks. It is also important to remember that these patients do not tolerate the colchicum preparations.—Therap. Monatshefte, May, 1914.

TREATMENT OF PEMPHIGUS WITH CONTENTS OF THE BULLAE

For the last two years the treatment of pemphigus by subcutaneous injections of the contents of the bullæ themselves—a sort of auto-sero-therapy—has been undertaken by T. Holobut and J. T. Lenartowicz, of Lemberg. In a preliminary communication upon the subject, the authors point out that there is no specific germ of pemphigus, although several different micro-organisms have been found in the blisters. In this treatment the hypothetical germ is injected in an unknown quantity, so that it is not vaccine-therapy in the strictest sense. The bullæ are pierced at their upper part by sterile glass cannulæ with fine extremities. The serous contents only are collected into sterile test-tubes. If the contents of some bullæ appear to be turpid, or otherwise objectionable, they are emptied into separate tubes. The tubes are then placed in a water-bath for half an hour at a temperature of 56 to 58° C, after which plate-cultures are taken in order to see if any strepto- or staphylococci are present. If, after 24 to 48 hours

no colonies are found the contents of the tubes are mixed with 0.5 per cent. carbolic acid and placed in sterilized flasks ready for use. Two cases of chronic pemphigus vulgaris were treated in this manner, i. e. by subcutaneous injections of 1 Cc. of the contents of their own bullæ. The patients were boys of eight and twelve years, respectively. Both had had previous intravenous injections of quinine, after the method of Leszczynski. After six injections in the first case of the same dose, at varying intervals of three to seven days, the blisters began to diminish in size and number until they ceased to appear. No harmful influence, generally, or locally, was observed. In the second case twelve injections of the patient's own blister-contents in doses of 1.2 to 2 Cc., spread over a period of seven weeks. During the whole time of the treatment the evening temperature remained normal and the boy gained in weight. Even in a fortnight the improvement in his general condition was very noticeable.—Urologic and Cutaneous Review, Sept., 1914.

TREATMENT OF THE ACUTE INFECTIOUS STATE IN CHILDREN

The standpoint that the diagnosis should be the first step in the therapy of all cases, is not always tenable. Especially in the acute infections in children, the physician is often confronted with symptoms, that require treatment before localization of the infection takes place and before signs, conducive to a definite diagnosis, are in evidence. The treatment, which Tobler, of Breslau, recommends for these early days of illness, is as follows: As soon as irritability, anorexia, vomiting, chilliness, the prodromata of an infection, appear in a child, it should be put to bed, in a quiet room, the temperature of which can be kept at about 66° F. The thirst usually complained of, is satisfied with frequent but small quantities of pure water or weak lemon or orangeade. During the first days the diet should consist of milk with tea or cocoa added, zwieback or white bread, moderately thick gruels, containing eggs, cold puddings of corn starch and apple sauce. When the fever has persisted for several days, plenty of nourishment must be insisted upon. Rice, potatoes and macaroni are added to the diet, also vegetable purées and later even plain meat can be allowed. In infants, if breast-fed, the nursings are shortened and very weak tea, sweetened with saccharin is permissible in the intervals to allay thirst; when bottle-fed, the feedings are diminished by one-fifth or one-fourth and the baby gets an equivalent amount of weak tea. Diarrhea is often prevented in this way. In older children a tendency to constipation is frequent. An enema on the first day is therefore advisable, followed by mild laxatives, if necessary.

When the temperature reaches 104° F. or over, antipyretic treatment is required. In infants the most practical physical procedure to reduce temperature is the tepid full bath. 95° F. is the proper warmth of the water when the child is put into the bath; the water is then gradually cooled to 88° or 90° F. in the course of five minutes. The bath should never last long enough to produce shivering or cyanosis. If the child is somnolent, water at 85° F. is poured over it, instead of gradually cooling the water in the tub. Two or three baths may be given in 24 hours. High temperatures in older children are effectively treated in the same way, but cold packs are perhaps more practical. The patient is wrapped in a wet sheet and blanket serves as an external envelope. The temperature of the water from which the sheet is wrung out, may be anywhere from 68°-85° F. according to the degree of pyrexia and the general condition of the child. The more frequently the sheet is changed, the more rapidly is the temperature reduced. More than two cold packs an hour are, however, never employed and a fresh sheet should only be applied when the preceding one as well as the surface of the body are warm. When it is undesirable to disturb a patient frequently, cool cloths may be laid on the anterior surface of the trunk and changed every 20-30 minutes until the desired effect is achieved.

Regarding chemical antipyretics, Tobler says that there is hardly a doubt but that they are more reliable than physical means and that their effect is of longer duration; besides they seem to act upon the symptoms of intoxication, accompanying high temperature, more markedly. The object in administering drugs of this class must not be to produce normal temperature, but simply to diminish the fever sufficiently to cause a sort of euphoria, which facilitates nourishing the patients' acts soothingly upon the nervous system and is conducive to sleep. The mode of administration varies in accordance with the temperature. If the latter is high all the time, small doses are given at short intervals; when the temperature chart shows a high peak once or twice a day, one or two larger doses at the time of the hyperpyrexia are in order.

At times with the onset of an infection, symptoms of meningeal irritation are in the foreground to such an extent that the

diagnosis of meningitis is seriously considered. Such cases call for lumbar puncture, as it is of service both diagnostically and therapeutically.

To encounter signs of weakening of the circulatory system in the early days of an infection is exceptional. True, the pulse rate of children becomes rapid at the slightest provocation, but cardiac insufficiency is rarely observed, for the muscle of a child's heart is capable of withstanding considerable strain for a long time. When circulatory disturbances do occur, it is usually the vasomotor system that is paralyzed. With faint heart sounds, rapid pulse and peripheral cyanosis, stimulants are indicated. In mild cases Tobler gives caffeine sodium benzoate, 0.03 to 0.5 Gm. according to age, as drops or in mixture, several times a day, but in most cases he prefers to inject one-half to one syringeful of 10 per cent. camphor oil, repeatedly if necessary. In serious cases digitalis is called for in addition to the camphor, and in the desolate condition of general vasomotor paralysis, adrenalin is recommended. Tobler's favorite digitalis preparation is the solution of digipuratum, of which he gives 3 to 5 drops from one to three times a day to infants; to older children larger doses are administered and varied according to the results obtained. Of a 1:1000 solution of adrenalin, ⅓ to 1 Cc. is injected several times a day.—Deutsche med. Woch., No. 26, 1914.

TREATMENT OF CHRONIC GASTRITIS

In an article on chronic gastritis, Walter Wolff of the the Ewald clinic, Berlin, deals with the therapy of the condition in the following way. As is self-evident the treatment must, when possible, be directed towards the factors, which have either produced the gastric catarrh or tend to cause it to persist. Thus decayed teeth should be attended to and where teeth are missing, false one should replace them. Tobacco and alcohol must be restricted and any cardiac, pulmonary, liver or kidney disease which happens to be associated with the gastric condition, should receive the treatment it requires. From a dietetic standpoint, food which does not mechanically irritate the stomach is of prime importance. Thorough mastication is essential in order to bring the reflex effect of the act of chewing on the gastric secretion into play. One should allow but little fluid during meals to avoid dilution of the already depleted gastric juice. Raw food is prohibited.

The increased production of mucus can be acted upon by alkaline waters. 200 to 250 Cc. at body temperature are to be taken on an empty stomach, that is, about one-half hour before meals. With hyperacidity the waters of Vichy or Carlsbad are advisable, while stimulation of the gastric secretion is accomplished by the sodium chloride springs of Kissingen and Wiesbaden. For the latter purpose the bitters are also of advantage. For anacidity or marked subacidity, dilute hydrochloric acid is universally recommended, but it is necessary to give it in sufficiently large quantities. The Ewald clinic uses at least fifty to seventy and at times one hundred drops of dilute hydrochloric acid partly before, partly during, partly after meals. For preventing the acid from acting injuriously on the teeth, rinsing the mouth with an alkaline water directly after taking the acid, is suggested. The administration of ferments is not necessary as a rule, because the total absence of enzymes in the stomach is not as frequent as the lack of hydrochloric acid and because it has been shown that in anacidity the disturbance of intestinal digestion is due to the nonexistence of acid. As it is impossible to restore complete gastric digestion in these cases by means of acid and pepsin medication, it is advisable to support pancreatic function by the administration of pancreatin or pankreon.—Med. Klinik, No. 29, 1914.

TREATMENT OF PERTUSSIS

During an epidemic of whooping-cough in the winter of 1912-13, Weinberger had occasion to test practically every remedy recommended for this disease. Careful observation of the effects, produced by the various preparations led him to adopt a formula, which contains about everything advocated for pertussis. He acknowledges that the prescription is not a simple modern one, but rather an old-fashioned mixture of many ingredients. However, it does not taste badly and its action is gratifying to the little patient, to the parents and to the physician. The formula is as follows:

Euquininæ	2.0	Gm.
Antipyrinæ	4.0	Gm.
Luminal	0.8	Gm.
Narcophin	0.12	Gm.
Bromoformi	0.5	Gm.
Glycerini	10.0	Cc.
Spt. Rectificati	2.0	Cc.
Syrupi	200.0	Cc.

Infants receive ½ teaspoonful, children from one to three years of age 1 teaspoonful, those four years old ½ tablespoonful and older children 1 tablespoonful at 8 a. m. and 2 p. m., while at 8 p. m. double the

morning dose is given. A piece of chocolate directly after the medicine dispels the taste left by the bromoform, but after a few doses this is unnecessary. The mixture must be shaken before it is administered, because euquinine is insoluble and bromoform dissolves with difficulty. It is important to continue this medication for two weeks after the last paroxysm has occurred, the dose being diminished very gradually, otherwise relapses are unavoidable.

Weinberger treated sixteen cases in this way, five of them were very severe, and as the results were equally good in all cases, publication of the treatment seemed justifiable.

Regarding the mode of action there is really nothing to say. As soon as the adminstration of the mixture is begun, the children are not disturbed at night, the paroxysms rapidly diminish and expectoration seems easier.

The remedy is also efficacious in laryngitis, laryngospasms, bronchitis and asthma, for controlling the cough.—Med. Klinik, No. 27, 1914.

MIOTICS IN GLAUCOMA

W. C. Posey, of Philadelphia, gives the results of further observations on thirteen cases previously reported and on eighteen cases now reported for the first time, as to the results of treatment of chronic glaucoma by miotics. The figures obtained by an analysis of these thirty-one cases agree in a large measure with those of the 1908 report. The best results of all were obtained in the desperate cases of the type in which iridectomy is attended with such bad results, and while cyclodialysis and trephining may be less injurious he will continue to employ miotics until convinced of the superiority of operative measures. His observations have convinced him that they cannot be regarded as curative, as the process continues, though the eye grows steadily harder, the excavation becomes broader and deeper and the anterior chamber shallower. He still insists strongly, that miotics should be used as the sole method of treatment only in cases that are free from so-called attacks of glaucomatous congestion, as these are the chief indications for some form of operative treatment, and, also, to gain the full benefit of miotics, they should be properly administered. "Beginning in doses small enough to avoid creating spasm of the ciliary muscle, and rapidly increasing the dose until the pupil of the affected eye is strongly contracted, this degree of contraction should be maintained as long as life lasts by gradually increasing the strength of the solution, from time to time, and by instillations of the drug at intervals of every three or four hours. The miotics best controlling intra-ocular tension are physostigmine (eserine), salicylate and pilocarpine nitrate. The physostigmine salts is more persistent in its effects and less irritating to the conjunctiva. Conjunctival irritation can usually be avoided by using only fresh and sterile solutions and by frequent cleansing of the conjunctiva by boric acid solution. Such irrigation, if it occurs, is usually controllable by local applications of argyrol, mild lotions, ice compresses and a weakened dose of the miotic. Gentle massage of the eyeball for five minutes several times a day is useful, and the patient should be instructed as to the number of hours the eyes should be used in near vision. Proper lenses should be adjusted for near and far use and the refraction frequently tested and corrected. A number of hours daily should be spent in the open air and the better part of the year under the most favorable climatic conditions. The skin should be kept active, the digestion and bowels attended to, and local inflammation in parts near the eye, such as the nose, should be promptly allayed. Care should be given to the peripheral circulation, and strychnine and the salicylates are useful.—Jour. A. M. A., July 18, 1914.

TREATMENT OF DIPHTHERIA

J. J. Jervis and V. C. Martyn, writing in the Practitioner for August, 1914, say that their own experience does not bear out the contention of those writers who assert that liberal doses of antitoxin are responsible for many of the bad after-effects of diphtheria. Their own experience would seem to show that these ill effects are just as apt to be produced by too small a dose.

In severe cases they find that the administration of sodium bicarbonate is of great benefit. In all bad cases, especially where there is involvement of the tonsils and fauces, there is an interference with fat metabolism in the liver with the result that diacetic acid and acetone appear in the urine and fat accumulates in the heart, liver and kidneys. It is undoubtedly this progressive change to which the vomiting and the cardiac irregularity are due. Not only does the sodium bicarbonate seem to be grateful to the patient but it usually effectually checks the emesis. Adrenalin is not given for the purpose of raising the blood pressure but to keep it from falling and it is, therefore, given in small doses at

regular intervals from the very start of the case and is discontinued when the circulatory system has recovered its tone. The authors condemn the use of occasional large doses of adrenalin or like substances, especially toward the end of a case where to do so is merely to add to the load of an already failing heart.

RECTAL GONORRHEA IN THE FEMALE

Schmidt reports that he found 151 cases of rectal involvement in a series of 746 cases of gonorrhea. The author divides his total of 746 into two periods, during the first of which he was satisfied with the clinical appearance of external and proctoscopic examination only, and during the second of which he actually demonstrated the gonococcus microscopically. Under the first category he includes 479 cases, in which 87, or 18.3 per cent., exhibited the congestion, hyperemia, and erosions of the mucous membrane, which are clinical evidence of rectal involvement. He is careful to point out that the subjective symptoms of the condition are minimal—in fact, only 4 of the 151 cases had complained of discharge or rectal tenesmus. The importance of this fact is very obvious, and should lead in the future to the examination of the anus in every case of gonorrhea in the female, whether a discharge be present in this situation or not, for the author insists that a rectal discharge is a rarity. The mode of infection is by direct backwards flow of the vulval pus in the supine position, and a reinfection from rectum to vulva after the latter has been cured by treatment probably never takes place. In his second series of cases, in which swabs were taken from the rectum, the percentage of positive results is even higher. Out of 267 cases thus examined 74, that is, 27.7 per cent., were found to have gonococci in the rectal mucous membrane. A most interesting fact is stated by Schmidt. In the whole course of his investigation, which extended over more than a year, not one single case of rectal stricture was observed, although there were many long-standing and recurrent cases in his material. In his opinion gonorrhea of the rectum does not cause rectal stricture, and the etiology of this troublesome condition badly needs revision. The treatment of rectal gonorrhea, which should go hand in hand with that of the vulvovaginitis, is not a very difficult or arduous matter. In addition to precautions which aim at preventing the back flow of pus from the genital tract, Schmidt recommends the daily injection of a 1 per cent. albargin solution in mucilage of tragacanth, and mentions he is in the habit of using Almkvist's formula:

Albargin	3 Gm.
Mucilag. Tragacanth	8 Cc.
Aq. Destill	286 Cc.

This should be injected as high as possible, although rectal gonorrhea never extends more than 8 Cm. from the anus, with a soft catheter, and retained by the patient as long as possible. Where albargin is not tolerated, 1:2,000 to 1:1,000 irrigations with potassium permanganate solution should be administered. The rapid results (two to three weeks) obtained in the majority of his cases by Schmidt depend, in his opinion, on the mucilaginous quality of his injections, which are more easily retained than the watery irrigations administered by other authors.—Dermat. Zeitschr., Dec., 1913, No. 20.

HYPOTHYROIDISM IN CHILDREN

According to J. Lawson Dick, a considerable proportion of children who are subjected to operation for enlarged tonsils and adenoids show symptoms of rickets. These children are frequently mentally dull, with dry rough skin, nasal or bronchial catarrh, sluggish circulation, coarse hair, defective speech and soft bones. The effect on the teeth is usually shown in the incisors which are jagged with defects in the enamel and an exposed edge of dentine. These are symptoms usually associated with deficiency of thyroid secretion. In the disturbance to the mutual relations of the thyroid, thymus and parathyroid glands we have the probable explanation of the cause of rickets. The older theory that a breast-fed child could not be rickety, the author holds, is unfounded, for in his experiences in school work he has frequently encountered just such cases. His explanation is that the mothers of these children have lived in want and under unhygienic conditions and that during lactation they suffered from deficient thyroid secretion. The effects of this condition reacts detrimentally upon the children. The poor quality of the mother's milk is not alone sufficient to explain the occurrence of rickets in the children, though it undoubtedly is a powerful contributing factor. The lack of proper food and the unhygienic surroundings in later years is another factor. The fact that the children usually become more robust after reaching the age of seven years is probably due to their being permitted greater liberty in running about out-of-doors.—Lancet, Sept. 5, 1914.

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OCTOBER, 1914

EDITOR'S NOTES

Medical Treatment of Benign Stenosis of Stomach and Duodenum

Among a very large percentage of physicians, a diagnosis of benign stricture of the stomach or duodenum always means an operation and in these days of surgical triumph, the value of the drug thiosinamine and its derivative fibrolysin in just these cases is apt to be forgotten. It is, of course, necessary that a correct diagnosis be made, by all the means at our disposal, and that mechanic, dietetic and hygienic measures be resorted to at the same time.

The first publication on the use of thiosinamine in stenosis of the pylorus is that by Hartz in the Deutsch. med. Woch., February, 1904. Since then, the drug has been used in four cases by Dr. Albert Bernheim, of Philadelphia, who reports quite enthusiastically in the Interstate Medical Journal of September, 1914, on the results he has obtained. In case 1, a painstaking examination showed a stenosis of the duodenum following the cicatrization of a chronic ulcer, which perhaps even had perforated with following perigastric and periduodenal adhesions. Operation was refused and a conscientious treatment for ulcer only gave temporary relief. The pain, however, soon became insufferable, so that thiosinamine was tried as a last resort. One-half grain in hydro-alcoholic solution was given every third, then every second and finally, every day as the drug was well-borne. The improvement was so rapid that a month later the patient could eat any kind kind of food without pain or distress. In two months she had gained seventeen pounds. The good results have lasted for ten years and the painful swelling can no longer be palpated.

In the second case, the suffering dated back eight years and the patient had been treated during all this time for nervous dyspepsia. Lavage, dietetic and hygienic measures brought some relief but soon the old attacks of pains, cramps and vomiting returned. Seventeen injections of thiosinamine at intervals of 2 to 5 days cured this patent completely so that she has now been well for eight years.

The third case was treated for a long time for gall-bladder disease but more careful examination disclosed cicatricial, obstructing tissue at the pylorus or duodenum. The injection of ½ grain thiosinamine here caused symptoms suggesting acute articular rheumatism (malaise, headache, fever, severe pains in the limbs and throat), evidently anaphylactic in character and lasting twenty-four hours. The patient showed the same idiosyncrasy to a second dose and even to a third dose of ¼ grain given two weeks later, though the gastric symptoms were decidedly improved, 1 to 2 grains were then given by mouth in capsules and thiosinamine was applied locally over the epigastrium, dissolved in collodion. It required six months to secure the result that hypodermic injections might have accomplished in a month. Three years after the beginning of the treatment, the patient now eats any kind of food.

In the fourth case, there was considerably diminished acidity and evidences of an obstruction at the pylorus. Malignancy could be excluded by the X-ray examination and thiosinamine was tried as the patient was averse to operation. The results of seventeen injections were excellent, and patient now writes that she is in "fine" health.

The action of thiosinamine is without doubt a constitutional one and has often been compared to that of tuberculin. The fibrous tissue for which the drug has a special predilection is usually but poorly nourished on account of its poor blood-supply; the action of thiosinamine shows itself in producing a marked hyperleucocytosis which is soon followed by a hypoleucocytosis. A chemical change occurs in the connective tissue, which is rendered softer and is soon absorbed.

The chief disadvantage in using thiosinamine is its slight solubility in water which necessitates the addition of alcohol so that the injections are usually painful. This difficulty may be overcome by using

fibrolysin, the soluble modification which is supplied sterile, in ampules. The anaphylactic phenomena described in one of the above cases is not common and the symptoms are really never alarming. In such cases, a certain degree of tolerance can usually be established by beginning with small doses and gradually increasing the amount. Wherever local application is desired it is no longer necessary to dissolve thiosinamine in collodion, for a fibrolysin plaster may be applied instead. Anaphylactic symptoms are very rare after the internal or local use of the drug.

The only contraindications are arteriosclerosis and tuberculosis, active inflammatory processes and where the fibrous tissue acts as an important support for other tissues.

Gastric and intestinal surgery is still full of dangers, ofttimes realized only too well by the patients who refuse their consent. It must, therefore, be regarded as a decided advance in therapy that this unique drug may also be used with success in these painful disorders which are often exceedingly difficult to operate and not rarely return from the surgeon to the physician.

***

Optochin in Serpiginous Ulcer of the Cornea

The investigations of Axenfeld and Uhthoff point to the pneumococcus as the cause of practically every serpiginous corneal ulcer. To Morgenroth and his coworkers belongs the credit of having determined that optochin, a derivative of quinine, chemically ethylhydrocuprein, has a specific action upon the pneumococcus. After Leber, Schur, etc. had published their experiences with this preparation, Kümmell, of Erlangen, tried it in twenty-five cases of corneal ulcer and obtained favorable results in twenty-four. He observed that when optochin is used in advanced serpiginous ulcers an almost characteristic reaction occurs. Within twenty-four hours, as a rule, the tissue surrounding the ulcer become clear and the edges of the ulcer appear clean, leaving a central infiltration, which gradually decreases. Often a white line of demarcation is seen at the ulcer's periphery. In favorable cases the cleansing process is complete in a few days. Extension of the ulceration was never noted after the edges had begun to react favorably. The hypopyon, always present in advanced cases usually disappeared after a few days' treatment. Occasionally it persisted and once it increased, but no increase of the ulcerative area took place. The accompanying iritis is also benefited by optochin. The opacities remaining after the ulcers had healed, were at no time larger than the original lesion, in fact in some cases they were smaller.

As optochin has a specific action on pneumococci only, their presence must be determined before treatment is begun. A gram stain of the secretion from the ulcer's edge or even from the conjunctiva, suffices in most cases. Great care should be exercised in taking secretion from the ulcer, for if unskilfully done the corneal lesion has been found to become considerably aggravated. Directly after the removal of material for bacteriological examination, treatment should be instituted. The quinine derivative is used when pneumococci are found, if diplobacilli (Gram negative) are present, zinc sulphate is indicated.

Kümmell uses optochin as follows: by means of a pledget of cotton, saturated with a 2 per cent. solution of optochin hydrochloride, the remedy is brought in contact with the ulcer for about one-half a minute. Anesthesia is necessary as the solution causes considerable burning. After this a 1 per cent. solution is dropped into the conjunctival sac every hour. The anesthetic property of the preparation shows itself after the first application and may last to a certain extent overnight. The 1 per cent. solution is continued until the ulcer is clean. If progress is not as rapid as desired, a second application of the 2 per cent. solution may be made. For the coexisting iritis, atropine is instilled until the pupil is dilated, whereupon it is discontinued until the pupil shows a tendency to contract again. The favorable results, obtained by Kümmell must be attributed to optochin alone as other therapeutic measures (local heat, bandages, etc.) were not employed. Although not invariably productive of the disired effect, optochin acted so much more beneficially in Kummell's cases than did other forms of treatment, that he strongly advocates its further use. The remedy can also be placed in the hands of the general practitioner, especially in the country, as an early instillation of a 2 per cent. solution checks the pneumococci until systematic treatment by a specialist can be undertaken. Optochin is of value in disease of the lachrymal sac. Kümmell found that the secretion disappeared after several irrigations with optochin solution. It is likewise to be recommended for removing pneumococci from the conjunctival sac as a preliminary to cataract operations.—Muench. med. Woch., No. 24, 1914.

Prescriptions

Infantile Convulsions:

As a sedative enema either of the following may be used:

Potassii Bromidi.....grn. iv–xv
Chlorali Hydrati.....grn. jss–vijss
Vitelli Ovi.....No. j
Aquæ.....f. ℥ij
Misce.

Chlorali Hydrati.....
Asafœtidæ.....āā grn. jss–vijss
Olei Amygdalæ Expressi.....gtt. xx
Vitelli Ovi.....No. j
Aquæ.....f. ℥ij
Misce.

When teeth are being cut, scarification of the gums and the administration of the following solution will often prove successful:

Potassii Bromidi.....grn. lxxv
Syrupi Aurantii Flor.....℥jss
Aquæ Destillatæ.....ad f. ℥v
M. Sig.: Teaspoonful three times a day for a child one year old.

—R. Oppenheim.

Acne Punctata:

Resorcinolis.....
Sulphuris Loti.....āā grn. lxxv
Aquæ Coloniensis.....f ℥v
The affected area may with advantage be rubbed with soap and water. Washing with a solution of borax is also useful:

Sodii Boratis.....℥j–jss
Aquæ Ferventis.....Oij
Overnight a little of the following ointment should be kept over the affected area:

Betanaphtholis.....
Camphoræ.....āā grn. ijss
Resorcinolis.....
Saponis.....āā grn. iij
Cretæ Præparatæ.....grn. viij
Sulphuris Praecipitatæ.....grn. xxiij
Petrolati Puri.....℥v
M. et fiat unguentum.

Chilblains:

Plumbi Subacetatis.....grn. lxxv
Petrolati.....
Adipis Lanæ Hydrosi.....āā ℥vj
M. et ft. unguentum.

—Hammerschlag.

Camphoræ.....grn. xv
Ceræ Albæ.....℥x
Olei Lini.....℥ijss
Balsami Peruviani.....mℳxxiv
M. et ft. unguentum.

Furunculosis:

Phenolis.....grn. x
Fl. Ext. Ergotæ.....f. ℥j
Pulv. Amyli.....℥ij
Zinci Oxidi.....℥ij
Ung. Aquæ Rosæ.....℥j
M. Sig. Apply on absorbent cotton to the boil, and fasten with adhesive plaster. Change once a day until boil has opened, evacuated and healed.

Black Eye:

Ichthyolis.....f. ℥iv
Olei Myrciæ.....mℳxx
Tinct. Capsici.....mℳx
M. Sig.: Apply carefully on bruised spots around the eye. Caution! Keep out of the eye.

Ringworm of Scalp and Beard:

The head is shaved, and washed daily with green soap or an antiseptic shampoo wash such as:

Thymolis.....grn. xv
Saponis Mollis.....
Spt. Vini Rect.....āā ℥j
This is allowed to remain about 15 minutes before rinsing off. To prevent spreading by continuity the hair around the edges of a patch should be pulled out. A good ointment to apply before and during the period of epilation, is

Cupri Oleatis.....℥j
Hydrarg. Oleatis.....grn. xv
Lanolini.....
Olei Olivæ.....āā ℥j

The following prescriptions are also said to be efficacious:

Acidi Salicylici.....grn. x
Sulphuris Praecip.....grn. xxx
Adipis.....℥j
Fiat unguentum.

Sulphuris.....℥j
Acidi Salicylici.....
Naphtholis.....
Hydrarg. Ammoniati.....āā grn. x
Lanolini.....
Paraffin Liq.....āā ℥j
Fiat unguentum.

Sulphuris.....℥j
Acidi Carbolici.....℥ss
Lanolini.....℥v
Paraffin Liq.....℥iij
Fiat unguentum.

Liquoris Formaldehydi.....f. ℥ij
Aquæ.....f. ℥j

Acidi Salicylici.....grn. xxx
Spt. Lavandulæ.....f. ℥j

Acidi Sulphurosi (recens paratur)..f. ℥ij
Aquæ.....f. ℥vj

Acidi Picrici.....grn. viij
Camphoræ.....℥iv
Spt. Vini Rect.....f. ℥vj

—Freshwater.

Asthma:

Ammonii Bromidi.....℥ij
Ammonii Chloridi.....℥jss
Tinct. Lobeliæ.....f. ℥iij
Spt. Aetheris Comp.....f. ℥j
Syr. Acaciæ.....q. s. f. ℥iv
M. Sig.: Dessertspoonful in water every hour or two.

—Pepper.

Neuralgia:

Quininæ Sulphatis.....℥jss
Ferri Reducti.....℥ss
Acidi Arseniosi.....grn. jss
Aconitiæ.....grn. ¼
M. f. pil. No. XXX.
Sig.: One pill every four or five hours.

—Hughes.

Hemorrhage in Gastric Ulcer:

Stypticini.....grn. x
Antipyrinæ.....grn. xl
Elix. Aurantii.....f. ℥j
M. Sig.: Teaspoonful every two or three hours as needed.

Otorrhea:

After thoroughly syringing the ear with warm chamomile tea, allow 4 or 5 drops of the following to run into the ear:

Ichthyolis.....
Aquæ Dest.....
Glycerini.....āā f. ℥ij

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Work for the Sake of Health.—"There are, strange as it may seem at first thought," says The Journal of the A. M. A. in its issue of September 26, "certain modern industrial changes which carry with them detrimental features that are not apparent on the surface. A growing group among whom the amount of muscular work done is small in comparison with the daily activities of their ancestors is coming into existence." The Journal does not refer to the fact that shorter hours of work have everywhere become the custom—that the blacksmith who formerly toiled twelve hours now completes his working day in eight hours. The changes which it considers are a consequence of altered methods of conducting business with modern extension of commerce. Machinery has replaced muscle. The development of the industries by machinery has called for a different type of human working-power in which skill rather than strength is required. As a modern writer has expressed it, the bodily qualities of the worker have been forced by the employer more and more into the background of valuation. Industrial factory work requires not so much strong men as persons who can perform with skill the many small tasks which the machines have so far not been able to perform. Hence the tendency to employ children, half-grown persons and women.

More significant than this is the fact that the number of those who do little manual labor has increased greatly. This is an era of office workers, of business and governmental officials whose implements are the desk chair, pen and pencil, rather than the hammer and the hoe. Even in agriculture machinery has eliminated some of the hardest types of manual labor. Muscular exercise, however, is a benefit rather than a detriment to the human economy. It improves the function of the essential organs of the body. hence there has arisen an unexpected consequence, namely, the habit of trying to avert the possible harmfulness of some of these changed conditions by "balancing the lack of paid muscle work by work for hygienic reasons, by play and sport." The creation of work for the sake of health sounds almost paradoxical.

Typhus Fever.—Russell M. Wilder, of Chicago, gives a review of the literature of the bacteriology of typhus fever, reporting again the results obtained by Ricketts and himself in Mexico, which were reached quite independently, as Rabinowitsch's publication in 1908 had not been seen by them at the time. During these earlier investigations Wilder tried to obtain further proof of the specificity of the bipolar bacillus discovered by Ricketts and himself by making an emulsion of the organisms of infected lice and attempting agglutination from serum of convalescing patients. These experiments were not reported, as their interpretation was rather difficult, the emulsions containing many contaminating bacteria. He felt fully convinced, however, that the bipolar bacilli were agglutinated; the preparations with typhus serum differing markedly from the controls of normal serum. He mentions the difficulties in cultivating the typhus bacillus from the blood, which he thinks casts some doubt on the results of those experimenters who have reported the cultivation of bacteria on ordinary mediums. They used agar and large flasks of broth, and no cultures were diagnosed before a week of incubation. In only two instances did any of the flasks contain any growth and those were obviously contaminations. The later literature confirming their results is also reported. The most encouraging as regards the culture of the germ is, in Wilder's opinion, that of Plotz, whose description of the organism agrees rather closely with that of the structures found in typhus blood by Ricketts and Wilder and later observers. Plotz seems to have succeeded in obtaining eleven positive cultures in twelve cases of typhus fever, six of them being the milder Brill's disease. These cultures injected into guinea-pigs produced a febrile reaction similar to that caused by inoculations of typhus blood. If later work bears out these studies, as it has so far, typhus must be included in the group of insect-borne bacterial diseases, together with plague and Rocky Mountain spotted fever. Both of these diseases are caused by bipolar bacilli that resemble the organism probably responsible for typhus. The close resemblance of typhus to plague and Rocky Mountain fever was early suspected by Ricketts before their joint investigation.—Jour. A. M. A.

Barber Surgeons of Egypt.—Lord Kitchener has inaugurated the plan of using the barbers of Egypt as vaccinators, sanitary inspectors, reporters of infectious diseases, and also to render first aid and to treat simple complaints. That is a rather large order and assumes a higher grade of education and intelligence than the barber possesses in any part of the world especially among the stupid peasantry of Africa. We have plenty of negro doctors here but they are mostly mulattoes or quadroons or indeed so white that it is hard to believe they are negroes at all. In medieval times when the barber did all the surgery, he went through a long apprenticeship, and as far as we know he was a man of more than usual ability. At present the barber is able to perform his work after a very short apprenticeship, and needs no education whatever. He seems to get as large a wage as an educated man, so what is the use of the three R's to him? The result is that we have a body of artisans who with some exceptions are not capable of being trained to do these various other things. Still of Kitchener succeeds with his peasants, Europeans also should. There is really no reason why the barber should not add to his income by taking up side lines except surgery, and they are dealing with too many skin infections to be trusted as vaccinators. It would attract a higher grade of men to the calling and perhaps we would contract fewer infections in barber shops. Nor can we see any public necessity for utilizing either barbers in surgery or pharmacists in medicine, and the drift of the evolution of civilization seems to be leaving them the practice of their limited specialties and nothing more. In spite of this drift, there are not a few physicians who have advocated a third profession somewhat similar to the chemists of Europe who occupy a decidedly higher position than the drug sellers who are not permitted to compound prescriptions, and can be trusted in minor illnesses. If we really need such an adjunct profession the colleges can supply the men, and after a proper course of study can issue a limited degree as they already do to doctors of public health. We can at least give instruction to barbers to avoid infection even if they never can do phlebotomy again.—American Medicine.

Book Notes

Diseases of Bones and Joints. By Leonard W. Ely, M.D., Associate Professor of Surgery, Leland Stanford Junior University.—The unusual interest now manifested by the profession in acute and chronic arthritis, as well as other forms of bone and joint diseases makes this book particularly timely. Prof. Ely is particularly well equipped from experience to present an authoritative work, having specialized in this particular branch of surgery for years. The book is intended primarily for the general practitioner, but instead of furnishing that long suffering and very import person with a mass of details, and with many methods of treatment from which he may choose, the book lays down broad general principles, with the evidence upon which they are based, and then shows how these principles may be applied. In a brief, terse way, it presents the anatomy, physiology and pathology of bones and joints, acute and chronic arthritis of various types, ankylosis, diseases of the shafts, acute osteomyelitis, chronic inflammations in the bone shafts, new growths in bone, etc. The profuse photo-micrographs with other illustrations aid materially in placing up to the of the reader the contents of the book and the marginal side-heads, printed in contrasting colors, permits of ready reference. It is a book which will be much appreciated by the general practitioner and can be read with the assurance that it presents valuable instructions from an authoritative source upon a subject where much light is needed. (220 pages, 94 illustrations. Surgery Publishing Co., 92 William St., New York, 1914. Price, $2.00 net.)

Collected Papers from the Research Laboratory of Parke, Davis & Co., Detroit, Mich. Reprints, Vol. 2, 1914.—A collection of twenty-two articles that have recently appeared in various scientific publications and which are the published records of the work done in the research laboratories of Messrs Parke, Davis & Co. at Detroit, Mich. The papers cover a wide field of inquiry and represent work of the highest type and are of great scientific value. To indicate their scope it is but necessary to mention that they cover such topics as hog cholera, physiologic activity of cannabis sativa, iodine content of the thyroid, cultivation of the treponema pallidum, studies on the gonococcus, canine distemper, protective enzymes, crystalline Kombe-Strophanthin, treatment of tetanus, etc.

Theorie und Praxis der Blutentziehung nach dem gegenwärtigen Stande der Wissenschaft bearbeitet von Prof. Dr. Heinrich Stern in New York.—A scholarly and at the same time a most interesting work on venesection by Professor Stern. The first part of the book is devoted to an historical discussion, to an account of the physiologic and therapeutic action of venesection and to technique. The numerous illustrations in this section add greatly to the value of the text. The second part of the work is devoted to a discussion of the application of venesection to various diseases, the closing chapter having to do with its value as a proplylactic agent. To those of our readers who have a working knowledge of the German language we commend the work as one of great interest and value. (Curt Kabitzsch Verlag in Würzburg. Price brosch., M. 3.50. Bound, M. 4.50. 1914.)

Traitement chirurgical moderne des kystes hydatique non suppurés du foie par le Dr. A. Meudic.—An exposition in considerable detail of the method popularized by Pierre Delbet for the surgical treatment of non-suppurative hydatid cysts of the liver. The work is in five parts, the first of which is historical, the second has to do with the following operative procedures: extirpation, marsupialization, suppression of drainage, and prophylaxis. The third section is devoted to a comparison of the methods of marsupialization and that of suture without drainage. The fourth and fifth parts are devoted respectively to operative technique and observations and conclusions. (1 vol. gr. in —8 des Annales de la Clinique chirurgicale du professeur Pierre Delbet. 5 fr. Librairie Felix Alcan, Paris, 1914.)

Guiding Principles in Surgical Practice. By Frederick-Emil Neef, B.S., M.L., M.D. Adjunct Professor of Gynecology, Fordham University.—The author answers herein some of the questions which present themselves to the general practioner and surgeon, particularly in the beginning of his career, during the period in which he formulates for himself the rules that are likely to direct him in his future work. The viewpoint is based on clinical studies in the operating room and at the bedside of the patient. The book covers the practical points in the preparation of the patient for an operation, the arrangement of the operating room, the important relations between the surgeon and his anesthetist, the assistant, the family physician, the nurse during the course of the operation, also the after care of the case. Other chapters in the book cover such important considerations as Sterile Washes and Wound Dressings. Sterilization of Utensils and instruments for the operation. The Surgeon's Hands. Wound Healing and Scar Formation, Asepsis, Suture Material, Anaesthesia, Incision, the Course of the Operation, Care of the Patient after Operation, The Treatment of Unclean Wounds, in fact, within this book of 180 pages will be found those very necessary essentials that guide in the successful handling of operative work. The mechanical features of the book are excellent, presenting throughout marginal headings in contrasting ink, facilitating most ready reference. (180 pages. Surgery Publishing Co., 92 William St., New York, 1914. Price, $1.50.

La Vie et La Lumière. Biophotogénèse ou production de la lumière par les êtres vivants; action de la lumière visible, des radiations ultraviolettes, infra-rouges, fluorescentes, des rayons X, du radium et des ondes hertziennes sur les animaux et sur les végétaux; photothérapie, par le Docteur Raphaël Dubois.—The work is in three parts. In the introduction the author reviews the work that has been done in this most interesting chapter of general physiology—that of the effect of radiation of various kinds upon the organism. The first part of the work is devoted to the study of the production of light by various animals and plants. He describes briefly the structure and functions of the organs involved. He claims to have isolated two substances to which he has given the names luciferine and luciferase. The second part of the book has to do with the action upon animals and vegetables of light, X-rays, ultraviolet and infra-red rays, and of fluorescents. The third part constitutes a sort of appendix in which are reviewed the physiologic and therapeutic actions of the X-rays, radium and Hertzian waves. (1 vol. in —8 avec 48 figures dans le texe, cartonné à l'anglaise, 6 fr. Librairie Félix Alcan, Paris, France, 1914.)

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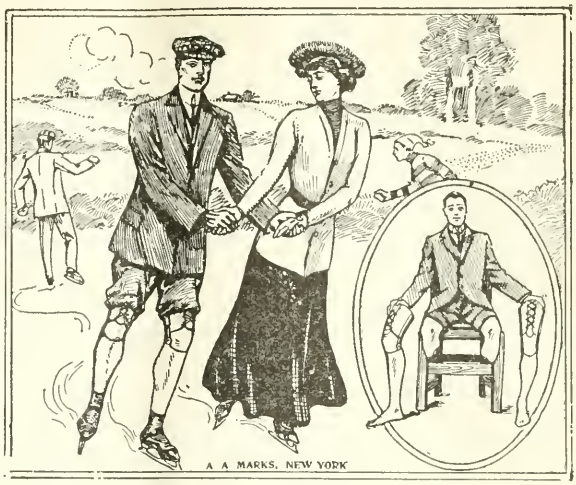

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Our readers will gain much that may be of great value to them by looking over the advertising pages of this issue. There are a number of very generous offers that may be taken advantage of by merely addressing a post card to the advertiser and mentioning MERCK'S ARCHIVES.

THE DOCTOR ORDERS DIET.—Oh, luscious steak, you seem to make my innards squirm with pleasure! Of all the meat that can't be beat, you are the pride and treasure. The cook has toiled with zest and broiled the steak just to my liking, upon my plate I see it wait, magnificent and striking. The gods are kind, that we can find such meat in steers and cowses; all men with tanks should give them thanks for inch-thick porterhouses. The doctor views my steak and chews the rag about my diet; "you beat the Turks," he cries; "your works will soon be in a riot. You ought to eat the wholesome beet, the turnip and the carrot, the bean and squash, so help me Josh," he jabbers like a parrot. "That grub's too rich,'twill give you itch and mumps and yellow janders; it trouble makes, so cut out steaks, and chickens, ducks and ganders." But man will buy his health too high if he feeds like the horses, and lives on hay day after day, and browses where the gorse is. I'd rather eat the juicy meat, of which no man is fonder and ere my time cash in, and climb to starry heights up yonder.—Walt Mason.

THE PUMPKIN AS A DIURETIC.—That common articles of food may possess in addition to a high dietetic value certain medicinal virtues is indicated in the use of oatmeal as a diabetic cure, in the employment of buttermilk in gastrointestinal disorders, in the administration of acid fruits as antiscorbutic remedies, etc. A. Kakowski in the Zeitschrift für physikalische und diätetische Therapie, June and July, 1914, extols the value of the pumpkin when administered in large quantities in the treatment of nephritic edema. He finds that it fulfills the following requirements of the ideal diuretic food: it should contain considerable water and natural salts, but should be relatively free from sodium chloride; it should be well borne by the alimentary tract and should act as a mild laxative; it should have nutritive value and should be palatable; it should not irritate the kidneys and should not give rise to harmful metabolic products; and it should be easily obtainable, cheap, and easily preserved.

The edible portion of the pumpkin is prepared by Kakowski in the form of a porridge, by being cut into small pieces, covered with water, and boiled over a slow fire for two hours. It is administered to the patient with butter, milk, or cream, or preferably mixed with a rice soup. The preparation most agreeable to the patient is one in which the pumpkin is boiled with milk or with cream.

The pumpkin cure was employed in severe cases of chronic nephritis in which an edema had been rebellious to the entire range of medicinal diuretics. Long standing and massive edemas disappeared within a short time under this method of treatment. Diuresis occurred after the use only of enormous quantities of pumpkin, varying from three to six pounds per day, and in most cases directly proportional to the amount of this food that was eaten. The diuresis occurred only during the period of administration. The number of casts rapidly diminished, and the reaction of the urine became alkaline. There was no evidence of any irritating effect upon the kidneys nor of any otherwise harmful influence upon the body. In one of the author's cases as much as 252 pounds of pumpkin were administered in the course of eighty days without giving rise to any untoward effects apart from large fluid stools. In addition to its diuretic action the pumpkin is said by Kakowski to have a high nutritive value, which fact is of particular importance in the case of chronic nephritics in whom the diet is usually greatly restricted.—Med. Record.

BEFORE OPERATING FOR EMPYEMA THORACIS aspiration on the table should be done always even though pus has been found by previous puncture. Nor should the chest be incised until the location of the pus is thus determined accurately on the operating table.—Amer. Jour. Surg.

SODIUM VERSUS POTASSIUM COMPOUNDS.—The beds of potassium salts in Stassfurt and other localities in Germany have been shut off from commerce by the war, and we are threatened with a shortage of potassium salts. As the supply of sodium salts is practically inexhaustible in this country, why should we not prescribe them? While many of us in prescribing the bromide have fallen into the habit of prescribing potassium bromide, we know of no reason why sodium bromide would not be just as good, at least in practically all cases.

Though it may be difficult to get out of the habit of prescribing potassium iodide, it is doubtful whether it is any more effective than sodium iodide. Sodium acetate could easily be substituted for the potassium acetate. The potassium salts are slightly more stable than the sodium salts, but in general the salts of the one base have no marked therapeutic advantage over the corresponding salts of the other. The potassium compounds are more active and are said to possess a more marked diuretic effect; but the sodium salts are less depressing to the heart and in some instances less disagreeable to the taste.

In this matter we have to consider the therapeutic effect, the side effects and the pharmaceutical reasons for preference of one salt over the other. In the case of the bromides and the iodides the therapeutic effect is derived from the negative element; that is, iodine or bromine. This being the case, it is a matter of indifference whether we use potassium bromide or sodium bromide, or whether we substitute sodium iodide for potassium iodide, except that the relative amount of iodine and bromine is a little greater in the sodium compounds than in the potassium. With regard to side effects, sodium compounds are thought to be less irritating to the stomach, and in large doses potassium bromide or iodide might be somewhat more depressing to the heart. With regard to physical properties, sodium iodide and bromide are less permanent in the air, but this concerns the pharmacist more than the physician, as these salts should be prescribed in solution.

Potassium acetate and citrate are used as diuretics, but can be conveniently replaced by sodium salts, as the therapeutic aim is reached just as well by prescribing sodium citrate or acetate as by the use of the corresponding potas-

sium salts Here there appears to be no difference on account of side actions or of physical properties.

It seems possible that the vogue of the potassium compounds has a historical cause, and is at present due largely to habit. The earliest source of sodium carbonate, from which most of the other sodium salts are derived, was the ashes of seaweeds; the earliest source of potassium carbonate was wood ashes. Wood ashes were plentiful and cheap, inland as well as on the seacoast; hence the natural preference for potassium compounds. It is of interest now to recall that the first impetus to the general employment of sodium salts was given by another devastating war. During the French revolution the important soap industry in France was seriously crippled because all the available potash in France was required for gunpowder, and the importation of soda-ash made from kelp and wrack was suspended. A prize offered by the Directory for the best method of producing sodium carbonate from sodium chloride was won in 1794 by Le Blanc. The sodium carbonate produced by his process, however, was not cheap enough to withstand the competition of the Spanish kelp-ash, which was imported into France as soon as commercial relations with other countries were reestablished, and the unfortunate Le Blanc died by his own hand in a poorhouse. The value of one of its by-products, hydrochloric acid, saved the Le Blanc process from extinction, and it is still extensively used in Great Britain; but the price of sodium carbonate did not become reduced to anything like its present level until the Solvay process came into general use in the latter part of of the nineteenth century.

How much effect, if any, these commercial factors have had on the therapeutic use of potassium compounds is not easy to prove. It seems probable, however, that the original high cost of sodium carbonate, the source of most other sodium compounds, has not been without influence on pharmacy. The pressure of necessity caused by the present war probably will have the effect of rationalizing this branch of our therapeutics. The sodium salts, being less irritating than those of potassium, will be given the preference except in cases in which the latter are specifically indicated.—Journal A. M. A.

The Finland Bath.—The story of the communal or family steam bath of Finland has been told by every traveler in that country, and many readers have perhaps been disposed to think that there was some exaggeration in the descriptions. The facts as related by one to the manner born show, however, that the singularity of this national custom has been by no means overstated. In a book entitled "Finlande et Finlandais" containing a series of essays by native writers on aspects of life in Finalnd, recently edited by Professor Werner Söderhjelm, of the University of Helsingfors, and published in Paris, Professor E. Lampén, who writes on popular hygiene, begins by giving an account of the universal addiction of the people of all ranks to the bath. Finland is a very sparsely populated country, and a great part of its surface, not occupied by lakes and rivers, is still covered by forests—timber, indeed, being its chief article of export. Many forest tracts are not yet utilized, but a certain amount of migration into these unworked districts goes on, and Professor Lampén declares that, like his forefathers of the distant past, the first act of a migrant of to-day, when he has settled on the place of his habitation, is to build a wooden bathhouse; in it the family lives by day, takes a bath in the evening, and sleeps by night; later on he builds barns as he wants them, and finally a house to dwell in. On the walls of the bath-house are shelves one above another to the ceiling. The hearth is in one corner, and piled upon it are large stones on which a fire of logs is kept burning all day. In the evening the whole household assembles, and each person, having undressed, disposes himself or herself on a shelf. Then hot water is poured on the red-hot stones, and instantly the room is filled with steam. The bolder spirits choose the upper shelves, where the heat is most intense, and there is a sort of bravado in bearing the highest temperature. When they have had enough of it the bathers get off their shelves have a douche of tepid water, and go out into the open air, whatever its temperature may be. In summer they lie down on the ground until the surface of the body, reddened by the heat, has resumed its natural color; in winter they dry themselves rapidly, though some of the bolder spirits may first roll in the snow; in any case, the rule to dress in the open air is absolute. The bath is very often taken every day at all seasons of the year, and always in August, when days are long and harvest work hard. During the bath a bunch of birch twigs may be worn at the waist, but otherwise every one is without any covering, and no harm results. In certain districts custom requires the sexes to take the bath at different hours, and in Helsingfors most apartments have bathrooms, in many cases with hot water laid on. Many workmen's lodgings in that city have bathrooms, but where this is not the case the number of public baths is so large that a peasant who migrates to the capital finds no difficulty in keeping up his practice of taking a bath daily. According to Professor Lampén the Finlanders have followed the custom from time immemorial, and he thinks they may have derived or inherited it directly from the Sarmatians who, as early as the beginning of the Christian era, were, it is said, in the habit of taking vapor baths prepared by pouring water on stones heated in the fire. Experience has convinced the people of Finland that the steam bath, in addition to its cleansing virtue, possesses a certain therapeutic use. It is considered a sovereign remedy for a chill or fever in the earliest stage to put the patient on the hottest shelf in the bath-house and to dose him with brandy; if this combination fails to produce perspiration the doctor is sent for, but there is a proverb to the effect that when bath and brandy fail death is at hand. For muscular stiffness and

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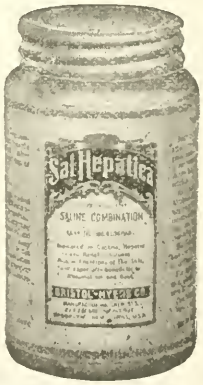

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joint pains the steam bath is combined with rubbing, and in every parish, Professor Lampén says, there are numbers of old women skilled in massage. Finally, he tells us that if there is no obstetric clinic at hand a woman always goes to the bath-house when labor sets in, and when the critical moment is at hand the room is filled with steam. It is believed that in this way the pains of labor are diminished, and it is suggested that as the room and its furniture are so frequently exposed to the action of hot vapor, they must be clean, if not sterile, and that therefore the risk of puerperal infection is diminished.—Brit. Med. Jour.

Never neglect to warn a patient who is using Chrysarobin ointment of the danger attendant upon getting some of it in the eyes. A severe conjunctivitis, if nothing worse, has resulted from the omission of this precaution.

Society and Sex Problems.—The intricate problem of the regulation of sex relationship in modern society is showing signs of a rapid progress through the normal evolution of all social problems out of the sphere of ethics into the sphere of sociology. The primitive state in which men at first approach all such problems is the ethical and emotional. They are filled with a repugnance, say, to prostitution, and they loudly demand measures for its regulation or suppression without realizing the underlying conditions. The failure of these measures, where obtained, after a while leads up to the second stage. The condition of emotional animosity gives way to the spirit of scientific inquiry; the primitive axiom, "Something must be done," is succeeded by a desire for a knowledge of the actual facts and the collection of information from all sources that are open: the problem, in short, passes from the sphere of ethics to the sphere of sociology; from the sphere of emotional but ignorant action to the sphere of intellectual inquiry. It is only later that the social problem finally passes back once more to the sphere of ethics; but the action taken is no longer blind and emotional, it is guided by the results obtained from the impassive sociologic investigations. Whereas the problem of marriage is still restricted within the first or ethical stage, the problem of prostitution has now fairly emerged into the colder air of sociology.—Lancet.

"Large" and "Small" Medical Colleges.—In its issue of September 26, The Journal of the A. M. A. comments editorially on the use of these terms. It says: "The application to medical colleges of the terms 'large' and 'small' should and usually does depend on the sizes of the classes enrolled. With this understanding it can be stated that there are some small medical colleges which are admirably equipped and which are undoubtedly furnishing their students with an excellent scientific and practical medical training. In proportion to the numbers of students enrolled, some of these small colleges are among the best equipped institutions in the country, and some of them have been rated in Class A+ and A by the Council on Medical Education." In an editorial comment in an exchange of The Journal, the statement was made that some of the satisfactory small colleges are "notoriously lacking in equipment." This The Journal denies. "There are, indeed," it says, "several small medical colleges which are 'notoriously lacking in equipment,' but in no instance does such a school furnish a satisfactory training in medicine. At the other extreme, there are some medical colleges which have large enrollments of students, out of all proportion to the limited supply of expert teachers, laboratory equipment and clinical facilities. Because of these deficiencies or because of a too liberal administration of entrance standards, such schools do not and cannot furnish a satisfactory training." The Journal emphasizes that a medical college should not be judged by the number of students enrolled but by the qualifications of its teachers; the possession of suitable and well-equipped laboratories; the abundance of clinical facilities available; the supervision exercised over the work and welfare of its students and—last but not least—the evidences of the skill and training of its graduates.

The cystoscope and a rectal examination offer the most exact means of determining the size of the prostate. One cannot but believe that measuring devices are the inventions of men possessing but slight acquaintance with the cystoscope.—Am. Jour. of Dermatology.

The Historical Manikin of Brussels.—One of Brussels's curiosities is the naive bronze figure on a fountain back of the Hotel de Ville on the corner of rue de Chêne (Eikstraat) and rue de l'Eture (Stoofstraat). The statue is of considerable artistic excellence and of more than passing interest. The diminutive figure is a great favorite with the lower classes, who regard it as *le plus ancien bourgeois de Bruxelles.* It appears that our hero manikin was the Duke of Brabant, Godfrey III. As a child he won a great victory by being carried into the field of battle. In the thickest of the fight the child unconcernedly stopped to empty his urinary viscus. This was taken as a sign of good luck by the soldiers of Brabant, who redoubled their efforts and won the signal victory of Ransbeck in 1143 as a result. It was then resolved to raise a public monument and fountain in commemoration of the incident that led to the victory. The statue was at first made of stone, but later Duquesnoy made one in bronze, which now plays as a public fountain in the public streets in Brussels in the same attitude as the little Duke of Brabant is supposed to have occupied on the memorable occasion at the victory of Ransbeck.

This sprinkling hero of Ransbeck has been much coveted, says the Pacific Medical Journal for September, 1914. The English at the time of the battle of Fontenoy carried him away to Grammont. He was recaptured by the Belgians and carried back to Brussels. In the early part of the sixteenth century, Charles V presented the manikin with a gala suit of cloth. In 1774, when Louis XV took the city, the French soldiers carried him away. He was afterwards found near the church of Our Lady of Good Help and restored to his proper place and vocation. The statue then wore a white cockade. In 1789 he was decked in the colors of the Brabant revolutionaries. Under French regime he adopted tricolor. Next he wore orange colors. In 1817 the statue was again stolen by one Lycas. This caused universal mourning in Brussels, and when the manikin was again discovered some time afterward, there was great rejoicing in the city. After this episode extensive iron railing was placed around the manikin fountain to protect it from visitors. The thief, Lycas, was condemned to the pillory.

In 1830, our hero donned the blouse of the Belgian revolutionists. The Archduke Maximilian Emmanuel created him a knight of his order, gave him rich clothes and a salaried valet to dress him on festive occasions.

Louis XV, hearing that some of his French soldiers had insulted the hero of the battle of Ransbeck, gave him a costly uniform of the knight of his order. He also invested the statue with the cross of St. Louis. The manikin was also knighted by Joseph II. The bronze hero enjoys a considerable income and possesses a rich wardrobe; he has his own valet and also his own legal custodian. On feast days the manikin is clothed in his knightly costume presented to by King Louis XV.

On the twenty-fifth anniversary of Leopold II coming to the throne in 1890, the manikin dispensed wine and beer through the outlet of his fountain of youth to a multitude of visitors. This manikin statue is the most beloved citizen in Brussels. He is their mascot, their charm, their enchanted hero and defender.

All the world pays him homage. He is a friend of all governments, and the sovereign law of Brussels respects his naive and peculiar privileges.—N. Y. Med. Jour.

Heredity in Man.—W. Bateson points out that potentialities and aptitudes, physical as well as mental—sex, colors, powers of work or invention, liability to diseases, possible duration of life, and the other features by which the members of a mixed population differ from each other—are determined from the moment of fertilization. The clearest evidence of regularity in the inheritance of human characteristics has been obtained in regard to the descent of marked abnormalities of structure and congenital diseases. As to the descent of hereditary diseases and malformations, however, one has abundant data for deciding that many are transmitted as dominants and a few as recessives. The most remarkable collection of these data is to be found in family histories of diseases of the eye. Neurology and dermatology have also contributed many very instructive pedigrees. The greatest practical change likely to ensue from modern genetic discovery would be a quickening of interest in the true nature of man and in the biology of races. The remedies proposed in America, in so far as they aim at the eugenic regulation of marriage on a comprehensive scale, have been devised without regard to the needs either of individuals or of the modern state. The definitely feebleminded one may with propriety restrain, and one may safely prevent unions in which both parties are defective, for the evidence shows that as a rule, such marriages, though often prolific, commonly produce no normal children at all. In the study of history biological treatment is only beginning to be applied. The causes of the success and the failure of races are physiological events, and the progress of man has depended upon a chain of these events, like those which have resulted in the "improvement" of the domesticated animals and plants. How has that progress in control of nature which one calls civilization been achieved? By the sporadic appearance of variations, mostly, perhaps all, consisting in a loss of elements, which inhibit the free working of the mind. Annul the work of a few hundreds of men, and on what plane of civilization should one be? One should not have advanced beyond the medieval stage without printing, chemistry, steam, electricity, or surgery worthy the name. These things are the contributions of a few excessively rare minds. Galton reckoned those to whom the term "illustrious" might be applied as one in a million. In the light of Mendelian knowledge the discussion whether a race is pure or mixed loses almost all significance. A race is pure if it breeds

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pure and not otherwise. Historically one may know that a race like the English was, as a matter of fact, of mixed origin. But a character may have been introduced by a single individual, though subsequently it becomes common to the race. A population like the English indeed owes much of its strength to the extreme diversity of its components, for they contribute a corresponding abundance of aptitudes. Everything turns on the nature of the ingredients brought in, and these genetic disturbances lead ultimately to great and usually unforeseen changes in the nature of population. External changes may indeed give an opportunity to special strains which then acquire ascendency. The industrial development which began at the end of the eighteenth century, for instance, gave a chance to strains till then submerged, and their success involved the decay of most of the old aristocratic families. In all practical schemes for social reform the congenital diversity, the essential polymorphism of all civilized communities must be recognized as a fundamental fact, and reformers should rather direct their efforts to facilitating and rectifying class distinctions than to any futile attempt to abolish them. To the naturalist the broad lines of solution of the problems of social discontent are evident. They lie neither in vain dreams of a mystical and disintegrating equality, not in the promotion of the malignant individualism which in older civilizations has threatened mortification of the humbler organs, but rather in a physiological coordination of the constituent parts of the social organism.—Lancet, per Med. Record.

In planning the incision for umbilical herniorrhaphy it is worth a little extra effort to restore, if possible, the normal umbilical depression.—Amer. Jour. Surg.

The Spartan Environment.—Two factors stand out prominently in the environment which Sparta afforded: viz., trust and noninterference. Every child was taught to trust in an older one and thus progressively the soldier in his officer, the officer in his king, and the king was a high priest. Thucydides, in his report of the "Address of the Corinthians," makes this quite clear: "The spirit of trust, Lacedemonians, which animates your own political and social life makes you distrust others having something unpleasant to say." And, again, "Justice with you seems to consist in giving no annoyance to others and in defending yourselves only against positive injury." The Spartans are reproached that they alone of all the Greeks do nothing. It is quite evident that if Sparta was only let alone, that the Spartans would preserve their own laws and environment, and, in short, would mind their own business and would not interfere with their neighbors. The Spartan law givers well understood the tremendous power of incentive and confidence in shaping the traits and characters of children. Incentive was guided away from mechanics and toward athletics. The Spartan had confidence in the Spartan, for or because, he knew the Spartan training and the self reliance and mass reliance which were its results. An assembly of Spartans was never a mob, for from earliest childhood they had been trained to obey orders *en masse*. Quite a different thing from the nondiscipline of the ordinary mob. The Spartan child was taught to trust his neighbors and his State. He was given such arms, clothing, etc., as were considered suitable, he took what was given and was taught their use. He became a trained soldier and was not quarrelsome for the same reason that a trained boxer is not quarrelsome. Their trust in each other was so great that it cast out worry and fear. It gave rise to overconfidence and led to their overthrow, for Epaminondas, the great Theban general, planned the battle of Lenctra on the basis that if the body of Spartans who were posted nearest the king were defeated the rest of the army would be an easy conquest. Xenophon tells how the Theban infantry were massed fifty deep, accomplished the purpose, and the Spartan first saw his environment invaded. Yet, even then, when of seven hundred, four hundred fell, such was the drilling in reliance one on another, that the survivors reformed their ranks and compelled a truce. It seems as though this is unequaled, even by Thermopylæ, as an example of absolute confidence in the staying power of one's fellows.

The Spartan environment furnished a child with a full stomach, a contented mind and a contempt for luxuries, but even in that day there were thinkers who found that content too great and the garments too scanty. Discontent and disadvantage are not necessarily equivalents. The discontent of an individual with his surroundings has led to his sufferings, these in turn have caused his progress, and his advancement has been to the advantage of his race. There was neither discontent, progress nor poverty in Sparta, but there was good health. The enthusiast on Eugenics may point to the Spartan with pride as having produced a magnificent race of human thoroughbreds, but the political economist will always demand, "what for?" since they "of all the Greeks did nothing."

The teachings of Spartan laws on Eugenics are the work of "men who did," but the waste of life was woeful, and so far as the world is concerned their existence is negligible aside from questions of race culture and physique.—D. H. Stewart, in the American Practitioner.

As a preliminary to operating for hypospadias divide all fibrous and skin bands that curve and shorten the penis, and allow the wounds to heal with the organ stretched.—Amer. Jour. Surg.

Large Sale of Red Cross Christmas Seals Expected.—With all the humanitarian war work of the Red Cross as a stimulus, and with an unusually attractive seal, this year's sale of Red Cross Christmas seals for the benefit of the tuberculosis campaign, according to the S. C. A. A. News, promises to exceed all previous records. The State Charities Aid Association, agent for the sale in this State outside of New York City, has with past sales set for itself a high mark, and will have to exert itself to the utmost to keep up its record of annual increases. The 1913 sale was an increase of 866,386 seals over that of 1912. The 1912 sale showed a substantial increase over that of 1911, as did the 1911 sale over that of the previous year.

The extent of the financial support to the Red Cross work in the field of the European war and the tremendous interest aroused by that work promise a most generous support of our own country's great war against tuberculosis in which the Red Cross Seals are a large factor.

Local agents will find the 1914 seal a great improvement over previous seals. The smile of the benign Santa Claus which forms the chief features of the "little sticker" is nothing short of contagious. The seal is square, about the size of a postage stamp. It is in three colors, red, green, and black.

The seals have now become a permanent feature of the holiday season. They even have a commercial value, as is evidenced by the increas-

ing number of orders for seals received every year by the central office from merchants in the small villages where campaigns have not been organized.

In the competition between the forty-seven cities and the larger villages of the State last year, Ithaca was the victor with a sale amounting to 5.81 seals per capita of population. The nearest competitors were Johnstown at 5.15 seals per capita, Amsterdam at 5.003, Hudson at 4.03, Watervliet at 3.65, Middletown at 3.61, and Ossining at 3.53. Buffalo sold 1,169,558 seals and Rochester 727,234.

In a case of suspected urogenital tuberculosis do not accept a negative microscopic examination of centrifuged urine as conclusive. Resort to guinea-pig inoculation.—Urologic Review.

Muscular Work and Efficiency.—"The mechanical efficiency of the human organism as a muscular machine and the conditions which modify or control it are topics that appeal to different persons from different points of view," says The Journal of the American Medical Association in its issue of Oct. 3, 1914. The Journal discusses the work of the Boston Nutrition Laboratory of the Carnegie Institution of Washington, which has brought together in considerable detail the important observations already ascertained by careful investigation of the subject of muscular work, many of them determined or verified anew by the researches conducted in this scientific establishment.

When muscular work is performed by the human body, the consumption of fuel either from food or from body material is greatly increased. The character of the supply available for this purpose may vary somewhat with the existing conditions. The amount of protein present is ample to provide for all drains on nitrogenous material during rest or short periods of work. Similarly, in a well-nourished man there is a practically unlimited supply of fat. It is the supply of carbohydrate which is comparatively restricted and liable to be somewhat easily depleted. For some years we have been taught that, contrary to the older beliefs, the character of protein metabolism is unchanged by muscular activity. It has become evident that under ordinary circumstances the power to accomplish muscular work is not derived from destruction of protein, but from the combustion of the non-nitrogenous nutrients. There seems to be little difference in the efficiency of the body as a machine, whether fats or carbohydrates are used as fuel. Inasmuch as the storage of carbohydrate is apparently depleted easily by excessive work, it appears as if this type of foodstuff were used in preference to any other by the contractile tissues.

Although the evidence in all of the experiments cited by Benedict and Cathcart, of the Boston laboratory, is strikingly in favor of the view that during periods of muscular work there is an increased draft on carbohydrate material in the body, the data by no means indicate that the muscular work is performed exclusively by the combustion of carbohydrate.

The foregoing has raised the inquiry as to the probable amount of carbohydrate stored in the human body. The calculations made from fragmentary analyses of tissues, as well as indirect evidence secured from the new experiments on muscular work, suggest not far from 400 Gm. (less than a pound) as a normal figure. This is by no means enough to perform a vigorous muscular task such as was undertaken by one of the subjects of the Nutrition Laboratory, who accomplished, on a stationary bicycle, work equivalent to a "century run" of 100 miles before breakfast, a remarkable evidence of staying-power in man. In this connection we may note some of the newer data on the mechanical efficiency of man, that is, the relationship between the energy consumption and the output of work. The highest value observed, in the case of the bicycle-rider referred to above, was 41 per cent., an exceptionally high figure. The average efficiency for a large number of experiments was 30 per cent. It does not vary greatly with different subjects. These data considered in conjunction with the usual muscular accomplishment there reported give substantial evidence of the superior functioning of the human mechanism.

The same therapeutic principles applying in acquired syphilis should be employed in the congenital form.—Urologic Review.

The Relation Between the Color of the Body-Fat and the Breed of Cattle.—The Journal of the American Medical Association notes the recent work of Palmer and Eckles who have shown that the color of the body-fat of Jersey cows is as much dependent on the food as is the color of the milk-fat. In studying the normal breed relations, the popular opinion that the body-fat of Jersey cows is normally characterized by a higher yellow color than Holstein cows has been at least partially confirmed by experimental study, although it was found that Holstein cows may also possess high-colored body-fat. At least, there seems to be more breed characteristic in this respect than in the case of the pigmentation of the milk-fat. Palmer and Eckles assure us that there is no foundation for the belief that beef has a lower value because its fat has a high color. If this pigment is the same as is demanded by the consumer for butter, why, they ask, should not beef with high-colored fat also be more desirable? It is recognized, of course, that some of the unfavorable attitudes toward beef with highly colored fat arises partially from the fact that it indicates that the beef probably came from a dairy cow.

The color of butter, that is, milk-fat, has been the subject of much misconception in relation to the supposed dietary value of the product. Americans are at length learning to enjoy butter independently of a "high" color or a liberal admixture of salt, neither of which are apparently essential to the fat itself. Palmer and Eckles remind us that the yellow body-fat of Jersey and Guernsey cows should not be a point against the use of these animals for beef. The pigments here are the same as those for which the consumer will pay a higher price when present in butter.

"There was a young lady named Astor,
Whose hobble skirt fit like a plaster,
But she happened to sneeze
And she felt a cold breeze
And she knew she had met with disaster."

Stimulating Hepatic Action.—Dr. Samuel Floersheim considers ipecac useful in stimulating hepatic action. For this purpose he gives the powdered extract in capsule or pill form, never using the wine or tincture. He has never employed the drug as a hemostatic.—Med. Standard.

In repeated recurrences of a balanitis without other obvious cause, think of a diabetic factor. Examine the urine for sugar.—Urologic Review.

Removal of Calcium from Blood.—It was found by W. G. MacCallum, R. A. Lambert, and K. M. Vogel, of New York, that one may devise a fluid containing practically all the inorganic diffusible constituents of the blood except calcium, and use it to dialyze normal blood in such a way as to remove from it a large part of its calcium. The dialyzed blood when perfused through an isolated extremity produces an extreme hyperexcitability of the nerves quite like that observed in tetany. Since perfusion with blood dialyzed in precisely the same way against a fluid of the same composition, but containing calcium in the proportion found in the normal blood, causes no hyperexcitability of the nerves it is evident that the hyperexcitability is due to the lack of calcium. This effect can be attained in only a slight degree by replacing the blood of a whole animal with the dialyzed blood, since under the conditions of the experiment the tissues cannot be sufficiently depleted of their calcium. It seems probable that the parathyroid secretion is not removed by dialysis, but is returned to the body with the dialyzed blood.

To bring this result into relation with the condition in tetany following parathyroidectomy, animals in tetany were bled and the blood was replaced in one case with normal blood, in the other with dialyzed blood poor in calcium. The normal blood immediately relieves the tetany and lowers the excitability, while the dialyzed blood does not. The authors believe, therefore, that this is a further proof that in the tetany of parathyroidectomy also the twitching and hyperexcitability of the nerves is due to lack of calcium in the blood and tissues.—Jour. of Experimental Medicine.

The introduction of a cystoscope by expert hands can be made practically painless if urethral anesthesia is intelligently done.—Urologic Review.

The Antitoxic Rôle of the Liver.—In 1910 Billard and Dechambre discovered that the fluid obtained by the autolysis of the liver of the pig destroys the toxicity of a mortal dose of cobra venom. Subsequently Billard found that the hepatic autolysate has the same action upon other poisons, such as the tetanus toxin, the venom of the viper, cocaine, curare, and strychnine. In 1912 Barlocco demonstrated that the hepatic autolysate of the pig counteracts the toxicity of the diphtheria poison to an extent depending upon the length of time during which the toxin and autolysate are in contact with each other. A further study along this line has been conducted by Amilcare Bertolini, who reports his results in the Annali dell' Istituto Maragliano, June 22, 1914. His experiments wer ecarried out with the liver of the ox and the findings of Barlocco were corroborated. But he went further. He sought to detemine the exact mechanism of the detoxication process. It was found that a solution of lactic acid of a strength equal to that present in a measured volume of liver subjected to autolysis for 48 hours, has the same effect upon the diphtheria toxin as the hepatic autolysate itself. If the acidity of the latter is neutralized the detoxicating action on the diphtheria toxin is removed.

The question now arises whether the detoxicating function of the liver is brought about by a purely chemical reaction or whether it is effected through the medium of a catalytic agent. It has been well established that the process of catalysis is inhibited by the presence of an acid even in the greatest dilution, and is accelerated by the presence of the hydroxyl ions. This would seem to signify that if catalysis has really a detoxicating action this would be favored by a slightly alkaline medium while it would be inhabited in the presence of the hydrogen ions. In other words, alkalinity would favor the antitoxic function, while acidity would not impair the virulence of the toxin. The conclusion is drawn that the mechanism of the detoxicating action of the liver is of the nature of an ordinary chemical reaction and does not call into play a catalytic agent.

The above facts are applied by Bertolini in a theory as to the relation of the liver to the various toxins that may be introduced into or formed in the human body. The diphtheria toxin, like all other posions, accelerates autolysis, as the result of which there are set free a larger quantity than normally of substances having an acid reaction, thus favoring a more intense detoxicating action upon the diphtheria poison. It would thus appear that the autolysis excited by the toxins becomes a means of defending the organism against these toxins.—Med. Record.

Be very careful what you do in a case of prostatic hypertrophy complaining of inordinate thirst. The kidneys are very probably badly involved.—Urologic Review.

Confusion in Use of the Word "Lutein."—The Journal of the American Medical Association calls attention to a complication which has caused confusion in the use of the word "lutein." "This word," it says, "has long been applied in physiologic chemistry to designate a group of fat-coloring matters which occur in nature and which have more recently often received the general designation of lipochromes. These yellow pigments are found in the adipose tissue, in the serum of the blood, in serous fluids, in fatty structures of the retina, in the egg-yolk, and in the corpora lutea. The use of the term "lutein" has been restricted as a rule to the yellow coloring-matter which develops in these ovarian structures, although one can find the word applied to derivatives of other physiologic tissues as synonymous with lipochrome. Thus in a recent discussion respecting the appearance of a yellow pigment in cerebrospinal fluid in cases of tumor of the spinal cord the word 'lutein' is employed to designate the color. Hitherto the chemistry of this group of compounds has been very indefinite and they have been classified and identified by their solubilities and other physical properties. Now that the subject is receiving more serious study, however, and the precise nature and relationships of the lipochromes or luteins is being cleared up, it may soon be possible to speak accurately of carotin or xanthophyll or some other specific substance instead of applying the more indefinite group expressions referred to above. It therefore seems particularly unfortunate at this time to find the word 'lutein' entering anew into the nomenclature of medicine in an entirely different sense. Lately various preparations of desiccated corpora lutea from animals are being sold under the designation of lutein. This new therapeutic product obviously represents something more than merely the yellow pigment of a part of the ovarian structure, for there is no evidence that the lipochrome itself is responsible for any physiologic effects. Evidently the word 'lutein' has commended itself, without consideration of the historic import of the word, as a euphonious designation which would at once suggest the natural origin of the product."

The best treatment of severe cornu cutaneum is excision, followed by a light touching of the base with the acid nitrate of mercury.—Urologic Review.

Residual Urine from an "Acquired Bad Habit."—It has been said that the force with which the urine is expelled is indicative, to some extent, of the physical vigor of the individual, provided, of course, that no mechanical obstacle exists to its passage. Hence it is not strange that many a man of advanced age experiences more or less trouble in entirely emptying his bladder simply from an atonic condition of the vesical muscular apparatus without the presence of stricture or prostatic enlargement. It is a matter of common observation that in elderly men the act of urination takes a longer time to perform, and the impatience thus engendered may lead to failure to complete the act, with a progressive tendency to residual urine. Moreover, the exigencies of the strenuous life of the present day encourage faulty habits in micturition; the calls of nature are frequently disregarded, the urine is incompletely voided or retained for long periods and the bladder subjected to overdistention. In a very suggestive article (Edinburgh Medical Journal) Dr. A. G. Miller points out that "an acquired bad habit" is a frequent cause of "residual urine," and expresses the opinion that given time and patience, particularly the latter, the bladder of an old man is capable of completely emptying itself without any assistance from the abdominal muscles. He calls attention to the fact that a man very often passes water when there is some urgency, and therefore, instead of letting the bladder empty itself by reflex action, tries to expediate the process by voluntary contraction of the abdominal muscles, and that in case of great hurry the act is generally incomplete. With advancing years and more sluggish functions incomplete urination becomes more frequent and may become habitual. To overcome this habit and arrest the formation of residual urine Miller advises that the bladder should be trained to resume its normal function, and that, given time and patience, this can usually be accomplished even in the presence of some obstruction from an enlarged prostate.—International Journal of Surgery.

Chronic onychitis is frequently due to ringworm, which can only be detected by careful scraping of the nail and soaking the debris in potash.

Galactorrhea with Amenorrhea.—E. Bilstead records the case of a married woman aged thirty, who had previously been well, and who had last been confined five years earlier. Labor had been normal, only a little blood had been lost, and the puerperium had also been normal. The child was weaned after six months, during which breast-feeding had been satisfactory. The secretion of milk persisted, and menstruation did not occur. The patient at first felt tired and nervous; later she gained strength, but at irregular intervals she suffered from headaches, tiredness, and cardiac discomfort, without, however, definite menstruation. The persistent escape of milk from the breasts was depressing, and a source of discomfort. Her appetite was good, and though rather pale, she was not emaciated. Hot douches and iron were prescribed in vain, and the patient regarded herself as incurable, for the galactorrhea and amenorrhea had lasted for over four and a half years. Her heart, lungs and urine were normal, and her blood contained 50 to 55 hemoglobin (Sahli). The breasts were not tender, but were distended with milk, which escaped freely on pressure. The uterus was rather small, but not atrophic. The ovaries were firm, and of the size of almonds. There was a free discharge of watery, white fluid from the uterus, and the cervix was lined with a somewhat red and swollen mucous membrane. Bier's congestion treatment of the uterus was prescribed, Everman's speculum being used. The collar of this speculum rendered its passage through the vagina difficult and painful. Suction was applied for periods of ten to fifteen minutes, with pauses every two minutes. For about half an hour after each operation she experienced slight labor-like pain, and the uterus exuded a little watery blood. This became gradually darker and more plentiful. The treatment was at first practiced every other day for a fortnight, later every third day, and finally, only every eighth or fourteenth day. The general condition was unaffected, but the galactorrhea was less profuse, and every third week there were signs of molimina menstrualia without, however, definite menstruation until the treatment had lasted four months, when it occurred and lasted three days. With the return of menstruation the galactorrhea ceased completely, and five months later the patient again became pregnant. The author traces this recovery to Bier's treatment, which has not, he claims, hitherto been practised with success in cases of galactorrhea. Even when galactorrhea is not accompanied by amenorrhea, he thinks it probable that Bier's treatment applied to the uterus would cure the former.—Brit. Med. Jour.

Infant Feeding.—H. D. Chapin, of New York, criticizes some of the tendencies that have existed as regards infant feeding. He thinks that the family physician should familiarize himself with the principles of nutrition and normal method of handling children as well as those of the disturbed infant. It has been too generally believed by physicians that when the digestion of the child became normal and when there was a gain in weight, their work was done, but this is a mistake. Technical methods of preparing foods have been allowed to overshadow the preparation of scientific food and it is a waste of time, Chapin says, to employ in every-day work the often difficult methods of scientific research when simpler methods will suffice. The physician is called on to do the best he can under the conditions he meets, using the scientific principles on which animal nutrition has been found to be based. Understanding and using these correctly he may originate his own methods which may give as good results as more complicated ones. There has been too great a tendency to concentrate attention on a single point instead of taking the needed broad view. One time it was all bacteria, at another all chemistry, again feeding was to be mathematical and still later we have caloric feeding. In living bodies factors have to be taken into account which are not met with in the laboratory. The living animal membranes have powers of selection and the processes are not purely osmotic. The differences shown in animal experiments with foods of supposedly the same chemical composition and the same caloric value has been so striking as to warn us not to place too much dependence on the caloric value of food which is but a rough guide at the best. No mode of permanently altering the properties of the milk by food has been discovered and the power of selection of the organism extends to picking out for the offspring what is needed for it

at each stage of its development. Attempts to base feedings on fats, proteins and carbohydrates are moves in the wrong direction. The foods for producing the best physical development of infants are readily prepared from milk, eggs, cereals and legumes by easily learned methods, altering but slightly their chemical integrity. It does not require much effort, Chapin says, for the physician to fit himself for infant feeding. He should become acquainted with the biologic principles of infancy and the properties of these food materials, and the latest scientific studies in nutrition point to more simplicity in the preparation of artificial food for infants. Too much manipulation with supposed caloric or chemical requirements in mind is, Chapin says, apt to ignore the biologic or vital elements that are essential.—Jour. A. M. A.

Sexual Neuroses.—Whilst it is true that in many instances a definitely existing lesion somewhere along the genito-urinary tract is the underlying cause of that distressing condition popularly described as sexual neurasthenia, yet in certain cases it is impossible of detection, or if detected its effects are too firmly fixed to make an immediately favorable response to the local treatment instituted. Wherefore the need for a soothing agent such as Bromidia (Battle) becomes necessary. Bromidia is of the greatest service. It soothes the sexual irritability and enables the patient to rest and sleep well. (Battle & Co., St. Louis, Mo.)

Abderhalden Test.—F. H. Falls, of Chicago, says a large amount of work has been done with the Abderhalden test, but almost diametrically opposite conclusions have been reached by others as he shows by quotations of the literature. Much of the work, however, has been done with modifications of the original tests, which rendered it valueless. He has sought to determine if there is a ferment in the blood that can be thus detected and whether a similar ferment can occur in other conditions. If such cases of non-pregnant individuals giving reaction occur, what conditions are likely to cause a wrong conclusion when using it as a test for pregnancy, and will a quantitative estimation of the strength of the reaction aid in differentiating from these other conditions when it is positive? Only by using Abderhalden's technic can proper comparisons be made, and Falls describes it in detail as used by him. One hundred and forty-five cases were examined, twenty-nine of them of pregnancy and a large number of other diseases. Twelve were puerperal cases, and he concludes that there is a ferment present in the blood of pregnant and puerperal women which can be demonstrated in a vast majority of cases by this method. Normal blood and blood from various pathologic conditions frequently gave the same reaction, varying in strength, with some exceptions, with the disease present in the case examined. These conditions would have to be ruled out when applying the test for pregnancy. Quantitative estimation of the strength of the reaction is of little value in differentiating pregnancy. From his results, Falls thinks the best working hypothesis to explain the phenomena noted is the following: "In many conditions of altered metabolism, whether due to infection, malignant disease, pregnancy, the involution period of the puerperium, kidney lesions or certain nervous diseases, there is an abnormal amount of ferment in the blood." This may be due to "Absorption of ferment by the blood from some source in the body, where a great amount of ferment activity is going on. Six such sources may be recognized by this work."—Jour. A. M. A.

Elimination of Urea.—"The approximately uniform distribution of urea which has been shown to exist throughout the body is also found when the urea content has been increased either by injections of urea or by interference with excretion by the kidneys, or by both means," says The Journal of the American Medical Association editorially in its issue of September 26. "The body cells appear to be able to take up surprisingly large quantities of the substance. The diffusion of urea to all parts of the body is accomplished very quickly. For example, no matter how soon blood is withdrawn after the end of an injection of urea a large part of this nitrogenous material has already gone out of the circulation. In view of this fact it is not difficult to understand why the concentration in the blood is never essentially higher or lower than that in the tissues themselves. Furthermore, urea is eliminated with extreme rapidity by the kidneys. The rate of excretion in normal animals is directly proportional to the concentration of urea in the blood. It may be retarded, however, after a certain amount of dehydration has occurred, that is, when elimination cannot be accomplished owing to lack of water for the kidneys to secrete. If water is then given, urea is again thrown out at an increased rate. There are doubtless few, if any, substances with which the body cells come in contact that permeate all kinds of cells so readily and that are eliminated so easily as is urea. As Marshall and Davis have pointed out, it is clearly the most desirable form into which nitrogen could be put for elimination from the body."

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By means of
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"Hypodermic" Medication in Plants.—The following interesting communication from F. Sanford, of the Leland Stanford University, was published in "Science" for October 9, 1914:

"I have in my grounds a plant of Spanish broom about a dozen years old and with a trunk about four inches in diameter which has for several years been seriously infested by cottony cushion scale (*Icerya purchasi*). I have tried various sprays, have put scale-eating beetles on the tree and at one time cut all the branches off and sprayed the trunk several times in the attempt to get permanently rid of this scale, but up to last winter it seemed that all attempts were in vain. In February of this year, when the broom was very thickly covered with the scale I bored a ⅜-in. hole in the trunk to a depth of about three inches, filled the hole nearly full of crystals of potassic cyanide and plugged it up. In two days the scale began to fall from the tree and in a few days all appeared dead. Others hatched and attacked the tree, but lasted only a short time, and the tree has since been free from scale and very vigorous.

"At the same time I bored a similar hole in an old peach tree which seemed to have passed its usefulness and put a like charge of potassic cyanide in it. The tree has since seemed more vigorous than before, and raised a fair crop of peaches. After feeding some of them to chickens and a rabbit with no apparent ill result, I ate some of the peaches, and could find nothing wrong with them. I have since put a similar charge of the cyanide in an orange tree with no apparent bad effect.

"It would seem from this experiment that it is possible in some kinds of trees, at least, to poison scale and sap-eating insects without injury to the tree. The method would seem to be especially adapted to killing various kinds of borers and insects which, like the pine beetles, burrow beneath the bark."

It is far better to introduce a non-metallic catheter into the bladder with forceps than with the fingers, however carefully one may "scrub up."—Amer. Jour. Surg.

Telephones for the Deaf.—It is curious that the telephone interests of the country have not done more in the way of devices that would assist the deaf to appreciate the ringing of the telephone bell or enable them to carry on a telephone conversation with a reasonable degree of comfort and success. Of course, those who are afflicted with some lesion of the nerve or the auditory center can not be benefited by any device whatsoever, but the vast mass of cases of reduced hearing are of those who are suffering from chronic catarrhal processes or from the cicatricial contractions following acute inflammatory processes which usually accompany the exanthemata and other infections involving the upper air passages.

Practically all of these cases have excellent bone conduction and very good air conduction when sound is properly concentrated and of the proper pitch. The Victrola reproduces the tones of the human voice with marvelous clarity and fidelity. It certainly seems that the perfection of a telephone receiver that would intensify sound and at the same time accurately reproduce syllables and inflection ought not to be an insuperable task. Dr. Alexander Graham Bell, himself, has been an interested friend of the deaf and the mute, and has done much for the education of the latter by means of the oral method of instruction —but it is for the hundreds of thousands of subjects of chronic catarrhal deafness that we plead that their lives, already subjected to a severe nervous strain, be made more happy and that they themselves be made more useful in this busy world by being enabled to use the absolutely necessary telephone themselves and not having to depend upon another for this indispensable service.

It is not the performance of a thankless task that we ask of some telephone corporation. The introduction of such devices as we speak of would mean hundreds of thousands of new subscribers throughout the United States. The commercial side of such a possible installation would be a very material increase in profits—and would stamp as progressive corporations which are always suspected of being inimical to improvements of great value through fear of stamping as obsolete their present equipment in which they have invested much capital. It would be well to suggest to them that their best defense against the demand for national ownership is a ready acquiescence in all reasonable demands of the public for a constantly improving and more widely available service.—Lancet-Clinic.

Speed is of great importance in thyroidectomy for exophthalmic goiter, but also important is deliberation in so placing the ligature around the inferior thyroid vessels that the inferior laryngeal nerve is not included.—Amer. Jour. Surg.

The Gastric Disturbances of Cardiac Insufficiency.—One of the classical distinctions noted in the gastric derangements of heart disease is that in mitral lesions there is a tendency to dyspepsia, whereas in aortic disease painful manifestations predominate. According to G. Faroy and C. Lian in the Gazette des Hôpitaux, this distinction is not an exact one. Mitral lesions may be accompanied by painful gastric symptoms and aortic lesions may be associated with dyspepsia. A more rational differentiation may be made between the following two groups of cases: In the first the congestion of the stomach as the result of cardiac insufficiency causes an impairment of the functional capacity of the stomach, and this may occur in all types of heart disease. The second group of cases comprises those in which the periaortic abdominal sympathetic plexuses are involved or in which there is perhaps an intermittent claudication of the stomach. These cases are characterized by the painful epigastric crises that are observed in abdominal aortitis. The dyspeptic cases may be subdivided into three categories. In the first, which includes three-fourths of all cases of cardiac insufficiency, the dyspeptic symptoms are either mild or are else masked by the other symptoms of cardiac distress. In the second category the gastric disturbances are so pronounced that they are complained of equally with the other symptoms, such as dyspnea, palpitation, etc. To the third category belong these cases in which the dyspeptic symptoms alone occupy the foreground, and in which the cardiac impairment may be unsuspected or may be revealed only on careful examination. The symptoms of the cardiac dyspepsias include anorexia, epigastric fulness, eructations, vomiting, etc., in other words, the entire gamut of sensorimotor disturbances of the stomach. In the diagnosis of these cases it is essential to exclude the cardiac disturbances secondary to gastric derangements, the cases of coincident gastric and cardiac distress secondary

to uremia, the cases of gastric disturbances resulting from the abuse of digitalis or from other medication, and the cases in which gastric and cardiac troubles are a mere coincidence. If the diagnosis is in doubt, the intramuscular injection of a suitable preparation of digitalis may furnish the proper therapeutic test.—Med. Record.

Physics of the Emotions.—The exaltation of victory makes wounded soldiers oblivious of pain, and the depression of defeat increases mortality. If a cat is frightened for ten or fifteen minutes by a barking dog, a sample of its blood will make strips of certain muscles relax when they are immersed in it, though such a portion of blood had no effect on them before the emotional disturbance. Frightened rabbits show almost complete prostration, and their brain cells, in contrast with those of normal animals, take a deeper stain from certain chemicals, and their size and shape are strikingly altered. Finally, if an individual is placed in circuit with a delicate galvanometer and made to laugh, to feel sad, or is suddenly surprised, there will be movements in the instrument indicating the passage of small electric currents. Such interesting scientific facts as these, and many others, make it clearly evident that emotions are something more than mere states of mind.—Exchange.

Siberia and the Eugenists.—Siberia's unique population should possess considerable interest for the eugenists. From 1658 until 1900, from 2,000 to 20,000 Russians were exiled annually to Siberia, mainly for voicing ideas and opinions which favored democracy and other modern theories; in other words, the inhabitants of the territory seem always to have been men and women of original habits of thought, of mental qualifications which would have made them prominent and distinguished under a form of government more like our own. As we understand it, these exiles have lived an outdoor life, rigorous, perhaps, but of the most healthful kind. Consequently we find in Siberia a most unusual combination of intellectual equipment of high quality with physical surroundings adapted to furnish bodily vigor and excellent health, a union produced by accident, of the exact kind that eugenists are striving to effect by design. The colonization of Siberia by the method above referred to practically ceased fourteen years ago; there should be now, even in the absence of first rate schools, a population with most exceptional gifts, veritable supermen if the theories of the eugenists are soundly based.—N. Y. Med. Jour.

A convenient means of protecting the hand from soiling during a rectal examination consists in passing the index finger through a small opening in a square of gauze and applying a rubber cot pulled down over the gauze at the base of the finger.—Amer. Jour. Surg.

Paraphrenia.—M. J. Karpas, of New York, describes Kraepelin's conception of paraphrenia which forms a subgroup of endogenous dementia, and in the clinical picture delusional ideas predominate. In some respects it may simulate dementia praecox, but the characteristic disturbances of motion and volition to the extent of bringing about disintegration of personality are lacking. Some abnormal emotional activity may appear, but striking apathy and indifference are absent and the general conduct is influenced by abnormal thought processes and not by volitional disturbances. Its etiology is not definitely known and there is no specific type of heredity. It occurs in both sexes, but the expansive form is met with only in women. The characteristic type of personality is not determined. The development is gradual, the course progressive and it usually ends in a state of psychic enfeeblement. He divides it into four large groups. (1) systematized, (2) expansive, (3) confabulatory, and (4) fantastic. Each of these types is described in detail. As regards diagnosis between systematized paraphrenia and true paranoia of Kraepelin the former is considered a disease process, the latter more of a psychic malformation.—Jour. A. M. A., Aug. 29, 1914.

Mystery and Fetichism.—One of the most disgusting—and one might almost say, amusing—phases of sexual perversion is fetichism. Yet, it is common in quite an innocent form. Consider the literature of a certain type, that has crystalized about a lady's glove, her handkerchief and, with only mild impropriety, about even her garter, stocking or corset. Prevailing fashions and customs have tended to remove the mystery from femininity in many ways. Romantic fetichism is apparently not so prevalent as formerly. Who, for instance, could become sentimental about an apparatus of elastic and metal, whose mechanic advantages are illustrated in street cars; or about undergarments which are pictured every day in the papers, with prices, and many of which are only partially concealed beneath the outer covering which represents what used to be called a dress? A good deal of the finer chivalry has been lost, but, with it, there has passed a lot of sentiment and immature eroticism. Perhaps the somewhat startling candor of the present will establish new standards of propriety and, after the readjustment, we will find that our social life has become more sensible and wholesome.—Buffalo Med. Jour.

When you encounter the association of one or more of the following symptoms: Trophic changes in hair, eyebrows, eyelashes, teeth, or gums; an habitual chilliness, biliary disturbances with lithiasis, dyspnea with asthmatic attacks; menorrhagia, recurring abortion, hemophilia, melancholia, depression, weariness of life, migraine, vertigo, sudden loss of consciousness, noises in the ears; somnolence, rheumatoid changes in the muscles, ligaments, or aponeuroses; nocturnal incontinence of urine, pollakiuria, loss of appetite and obstinate constipation—think of a possible deficiency of the thyroid secretion.—E. Hertoghe.

Influence of Spleen on Iron Metabolism.—Austin and Pearce's studies give evidence of increase in the iron elimination in three of five dogs during a period of two weeks following splenectomy, but not in two other dogs. The occasional increased output of iron may have some relation to the anemia which occurs in the early weeks after splenectomy and which varies in degree in different animals. No evidence was secured of an increase in the iron output at one, nine and twenty months after splenectomy. From their own studies and from examination of the literature of the subject the authors conclude that the spleen does not exercise a constant and important influence on the iron metabolism of the body.—Jour. Experimental Medicine.

No chronic bone swelling should be subjected to operation without excluding syphilis.—Amer. Jour. Surg.

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FEVERS OF OBSCURE ORIGIN IN INFANTS AND CHILDREN, WITH ESPECIAL REFERENCE TO RHEUMATISM

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ONE of the most striking characteristics of infancy and childhood is nervous instability. This is well exemplified in the tendency to convulsions upon the slightest provocation; the ease with which the rhythm of the diaphragm is disturbed resulting in hiccough many times daily during the first few months of life; the erratic secretion of urine with suppression or retention when there is nothing really wrong; and the ease with which the infant vomits because of even the slightest error in quality or quantity of food. The same may be said of diarrhea. The nervous instability is also manifested in a most interesting way when a "stomach rash" resembling measles, German measles or even scarlet fever appears, to frighten the parent, and occasionally worry the physician, when the cause is nothing more than an auto-intoxication due to improper feeding.

And so it is with the temperature, in the regulation of which the nervous system plays a great part. A slight nasal catarrh; an irritation of the skin; a lump of feces in the intestines; excitement; or a slight deviation from the usual diet, may cause a rise of temperature occasionally reaching 105° or even 106° F. To illustrate the instability of the heat regulating mechanism in infants and children, the following case is cited:

While an interne in a Philadelphia hospital, I recall a child of two years of age who was operated on for enlarged tonsils and adenoids. This child was somewhat cretinoid, and it was with reluctance that the patient was accepted for operation, but the parents insisted. Three hours after the operation I was hastily summoned to the bedside to find the little patient with a temperature of 110° F! Thinking that the thermometer was incorrect, several others were tried with the same result. The thermometers could only register up to 110° F., so that the temperature may have been even higher were it taken with the proper thermometer. In spite of all that was done to save the child, it died about one hour after the discovery of its condition. Post-mortem examination showed the presence of status lymphaticus, probably resulting from the anesthetic.

The frequency with which the physician is confronted with a child or infant with fever, the cause of which is almost impossible to discover early, renders it imperative that extreme care be exercised in obtaining a complete history and in making a comprehensive physical examination. Often it is also necessary to examine the urine, blood, and feces, and to make X-ray examinations and tuberculin tests.

A recurrent fever of undiscoverable origin which may be termed "recurrent idiopathic pyrexia" often exists in a child and often tries the soul of parent and physician. A child or infant at intervals of two or three months becomes languid, drowsy and feverish; the temperature may rise to 105° F. or even higher. These attacks each last a week or more and may continue to appear at intervals until the age of ten or twelve years is reached. During the attacks there may be constipation, slight headache, and anorexia. Physical signs are usually absent. The terms "bilious attack," "influenza," or even "typhoid" are occasionally applied to this condition, but the history of previous attacks and the absence of the characteristic symptoms of these diseases quiet the fears of the attendants. Though these attacks

occur in children of nervous or excitable temperament as a rule, it is difficult to exclude auto-intoxication as the exciting factor. The attacks disappear as the child grows older. In passing it may be mentioned that the clearing out of the bowels with calomel and castor oil usually causes the disappearance of the child's difficulties. If fever still persists, several doses of euquinine will suffice to bring the temperature down to normal. The diet must be regulated carefully in these cases.

Dentition is at times the only cause of fever in infants, but this belief is often dangerously abused. It is common to observe a fever of 102° or 103° F. with occasional vomiting and diarrhea when a tooth is nearing eruption, the symptoms clearing up promptly after the tooth is cut. Though lancing of the gum may be considered an antiquated method, it has its field of usefulness. I have seen a rapid amelioration of the symptoms after a judicious lancing of the gum when the tooth was at the point of eruption. The presence of convulsions during a tooth eruption is a strong indication for lancing.

Probably the most frequent cause of fever in infants or children is some gastro-intestinal disturbance. This is well illustrated in the following case:

I was called to see an eighteen-month infant of a Hungarian family, one morning last January. A clear history could not be obtained, but I learned that the patient had convulsions and high fever for several hours. No dietary indiscretion was admitted by the parents, but they stated that the child's bowels had not moved for thirty-six hours. Examination of the patient revealed some fulness and tympany over the lower abdomen. The infant had been given a teaspoonful of castor oil six hours prior to my visit, but there had not yet been a bowel movement. The child appeared dull, temperature 105° F. pulse 180, and respirations fifty per minute. I prescribed a course of calomel, and had hardly left the parents' doorstep when I was called back to find the child in a convulsion and almost black with cyanosis. The patient was at once placed in a warm bath and at the same time a high soapsuds enema was given. There was a large evacuation consisting of whole grapes, lumps of meat, and a quantity of other indigestible material, too difficult to describe, and which proved to be the cause of all its troubles. Almost immediately afterwards the child's temperature, pulse, and respiration returned to normal.

Improper quality of food such as a piece of raw fruit, cake, candy, or an improper milk formula may give rise to considerable fever, violent purging, vomiting, and at times convulsions. Constipation will likewise create a hyperpyrexia at times, promptly disappearing when the bowels are cleared. Often a child presenting a moderate rise of temperature will get well on the administration of water, proving that the neglect to supply water to an infant or child is an important error. The possible presence of intestinal parasites, especially seatworms, must be remembered in cases difficult to diagnose. In this connection it must also be recalled that infants often swallow foreign bodies, and this may be the etiologic factor in the patient's condition. When this latter is suspected an X-ray examination should be made at once.

Appendicitis is often mistaken for a "bilious attack." A careful examination of the abdomen supplementing the history of the case will usually reveal the presence of the classical symptoms to a greater or lesser degree. It must be remembered that appendicitis in children is at least as serious a condition as it is in adults. Occasionally an attack will come on with such mildness that appendicitis will be overlooked, when a sudden recurrence will result in peritonitis.

Volvulus is not a rare condition in children, and if a careful examination is not made the child may die of gangrene of the bowel. A case of this kind had recently come to my notice, the diagnosis of enteritis having been made by the physician in charge. When the proper condition was discovered the child was already moribund, gangrene and peritonitis having set in. Again, therefore, it must be emphasized that a physical examination can not be too carefully made.

A foreign body in the nose may give rise to fever which may puzzle all concerned until the offending pea, bean, or bead is discovered and removed. The resulting nasal discharge must be differentiated from acute coryza, in which case the discharge would be bilateral and the symptoms of longer duration. Presented with a child with profuse nasal discharge and marked depression, the possibility of nasal diphtheria must always be borne in mind. No matter how slight the suspicion, a bacteriologic examination of the secretion should be made.

Every child brought to the physician must have its throat carefully examined, if there be a fever. This will often clear up the diagnosis at once. It is a well-known fact that follicular tonsillitis often gives rise to very high fever and very severe constitutional symptoms. A careful differentiation between this disease and diphtheria is of course of great importance. A matter overlooked at times is the necessity to differentiate an attack of tonsillitis from the sore throat usually preceding and accompanying scarlet fever. In the latter case we are really dealing with scarlet fever, in the former, tonsillitis.

What other throat condition aside from tonsillitis and tonsular diphtheria may exist? If the mother states that the child possesses a "croupy" cough we must not depart too hastily, as it is often wise to remain in the presence of the patient for even an hour before the character of the cough is determined. The child's life may depend upon this procedure, as very often a case of laryngeal diphtheria will not assert itself to the physician if his visit be brief. In most instances an inspection of the child's throat in early diphtheritic croup will yield no information, the physician being guided solely by the mother's description of the symptoms and also by the loud "rasping" breath sounds issuing from the larynx, and the characteristic cough which may be heard every few minutes. The temperature and pulse present no diagnostic features. There is, however, some dyspnea and occasionally cyanosis—an urgent sign. False or catarrhal croup, so well simulates the diphtheritic variety, that it is always best for the safety of the child not to attempt a differential diagnosis before the administration of a generous dose of anti-diphtheric serum.

It must be remembered that the symptoms resulting from the presence of a foreign body in the larynx or trachea, especially a coin or button, may closely simulate croup. I can recall a case in which a five-cent piece had lodged in the trachea. The diagnosis was made by X-ray, but only after the child had been so devitalized by the foreign body that it died after the removal of the coin.

An acute bronchitis in an infant is usually easily diagnosed, but often the presence of a coexisting pneumonia will be unsuspected for a while, especially if deeply situated. It is always a wise plan not to rely upon the first examination, but to make repeated observation of the condition of the lungs before deciding on the presence or absence of croupous or of bronchial pneumonia.

That high fever may be due to a latent otitis media is conceded by all who practice pediatrics. There may be an acute inflammation of the middle ear without any other symptoms than the fever to suggest ear mischief. Often there is *no pain*. A purulent discharge being the first indication of the cause of the fever. The absence of pain by no means disproves the presence of acute suppurative otitis media. In an infant it is often difficult to determine whether there is pain or not. Even after a negative examination of the drum by an expert I have seen a profuse discharge occur within twenty-four hours. A latent mastoiditis may give rise to the same difficulties, there being no distinct evidences of tenderness over the mastoid region, until after considerable damage had occurred. In this connection it must also be remembered that a foreign body or the presence of a furuncle in the external auditory canal may also explain a rise of temperature in the child.

Usually the first condition entering the physician's mind as the possible cause of the child's illness is one of the exanthematous diseases. In this relation it is important to recall the period of incubation of each disease and also the manner of onset of the characteristic symptoms. It must also be remembered that the symptoms, especially the rash, may be atypical, rendering diagnosis difficult. The careful medical attendant will usually err on the safe side and exclude or quarantine the case for the usual length of time when the presence of one of the exanthemata is suspected. During our efforts of diagnosis the possible presence of erysipelas must be remembered. Occassionally cerebrospinal meningitis, influenza, and even typhoid fever, will be confused with an atypical exanthematous disease.

One of the most difficult tasks which befalls the lot of a physician in a case of fever of apparently obscure origin is to exclude the presence of a tubercular process somewhere in the child's system. One of the most common lesions found post-mortem in children is enlargement and caseation of the mediastinal lymphatic glands. In nearly all such cases the lung is also affected, so that we are really dealing with a case of pulmonary tuberculosis. This disease in the majority of instances is a more acute and more diffuse process than in adults. It is common to find the infection spreading in from the root of the lung apparently directly from the caseous bronchial glands, tending to affect the base of the lungs quite as much as the apex. It is also not uncommon to find one of the caseous mediastinal glands perforating a bronchus. The limitation of signs of acute tuberculosis to one lobe where there are signs of enlarged mediastinal glands is usually suggestive of the ulceration of a caseous gland into a bronchus. Often the physician's suspicions are aroused by the fact that a bronchitis or a pneumonia runs an unusually long course; the same may be said of measles and whooping-cough. The presence of patches of crackling rales and high pitched breath sounds, with some degree of impairment of resonance associated with bronchial breathing will strengthen the suspicion. The examina-

tion of the sputum is a difficult matter in children, as they swallow instead of expectorate. However, a swab from the pharynx may yield the desired secretion for bacteriological examination. In addition to the usual wasting, sweats, possible hemoptysis, etc., a Von Pirquet test, and an X-ray examination of the chest may assist in diagnosis.

The presence of an empyema of one side of the chest must be borne in mind as a possibility in cases with a tubercular history or tendency, especially when there is an area of marked dullness present. It is a common thing to see a case of this kind continue on for many weeks before a diagnosis is made.

The frequency of tuberculosis in other parts of the body in children must be remembered in the presence of an obscure rise in temperature. Aside from the dread miliary tuberculosis, a condition which occurs more often than is suspected, the tissues frequently involved are the bones, joints, cervical and other lymphatic glands and the meninges.

Acute primary pyelitis in infants and also at any period in childhood is another source of high fever apt to be overlooked. A child, usually a female, suddenly becomes very ill, manifesting considerable distress, is found to have a temperature of 105° F. or higher with apparently nothing to explain the fever until an examination of the urine is made. The fever is continuous and lasts for many days unless proper treatment is promptly administered. The urine shows a trace of albumen, probably due to the presence of pus cells, which are quite numerous in the centrifuged specimen. There may or may not be rigors, convulsions, or vomiting. There may be slight twitching of the face, eyes, or limbs, or the nervous symptoms may be so severe as to suggest some gross cerebral lesion. Acute primary pyelitis is usually found in female infants, and the etiology is explained as follows: The vulva becomes fouled with feces, the colon bacilli gaining access through the urethra to the pelvis of the kidney. It is a significant fact that in many of the cases just prior to the onset of the disease there have been unhealthy stools, diarrhea, or other evidences of intestinal derangement. The treatment of this disease is quite satisfactory, the free administration of potassium citrate usually allaying the symptoms. Hexamethylenamine or salol may also be tried.

Acute anterior polyomyelitis or infantile paralysis is often unsuspected when presented with a case of fever of obscure origin. It must be remembered that all cases occur in children between the age of six months and three years. The onset is not characteristic. There occurs a sudden fever ranging from 102 to 105° F., vomiting, occasionally convulsions, and rarely coma. I have seen cases the onset of which were typical of acute gastro-enteritis, the manifestations of infantile paralysis appearing within a day or two. Upon the disappearance of the acute symptoms it is discovered often by accident that the child has lost the use of one or more limbs. Not infrequently, a child apparently healthy the night before, is paralyzed the following morning. The diagnosis is rarely made until the stage of paralysis is reached.

One of the most important if not the most important condition to be borne in mind in the presence of fever in children is rheumatism, as the early recognition of this disease may mean the saving of a life from heart disease. The number of cases in which the diagnosis is overlooked is so great that to make a special study of rheumatism in children is time well spent. The following case is illustrative of a marked instance of late diagnosis:

H. E., male, 7 years old, had been suffering with recurrent attacks of fever for several months, which were attributed to "biliousness," "cold," "grippe," etc. It was soon discovered that he was gradually becoming paler, would tire easily with "shortness of breath" and pain over the precordium, and that his limbs and abdomen were becoming swollen. At this stage I was called, and found the little patient almost moribund with loss of cardiac compensation. On close questioning I obtained a history of vague pains in the knee joints for almost a year past. Physical examination revealed general anasarca, a heart enlarged well into the left axillary space, and a loud double murmur over the mitral area. Dyspnea was marked and there was already some cyanosis of the lips and nails. This case was too late for treatment; in spite of all efforts made to save the child, he died three weeks later.

In a child the articular phenomena of rheumatism become a matter of secondary importance. Judging from clinical observation, it may be remarked that a child may suffer severely from rheumatism who has never had a joint pain in its life. Some of the most severe cases of endocarditis in which the presence of "rheumatic nodules" confirmed the true nature of the disease have not at any time had any joint pains as far as could be ascertained. Often the joint pains are so slight as to be unnoticed by the parents or are dismissed from the mind with the assurance that they are "growing pains." Rheumatism is rare in infants, but very common in early childhood.

The symptoms of rheumatism in children, as already implied, differ from those

in adults chiefly in the much slighter character of the joint manifestations and in the much greater prominence and frequency of heart involvement. A vague pain in the limbs must always excite our suspicions, and a careful examination of the joints and heart must be made at once. To disregard this symptom is to invite an incurable or fatal heart lesion; to begin active treatment at once may quickly restore the child to health.

Occasionally the condition may be monarticular, or the first symptom complained of is a stiff neck, indicating that the joints of the cervical vertebrae are affected. It is often observed that a child who is brought for medical advice simply on account of wasting by a mother who has no suspicion that the child has ever had rheumatism or a cardiac affection, will on examination reveal a condition of advanced cardiac disease. On inquiry there may be elicited a history of vague pains in the limbs during the previous several months.

An important manifestation of rheumatism in children, of some diagnostic importance, is the "rheumatic nodule" so well described by G. F. Still, of London. It is found over the olecranon process, the condyles of the humerus, the femur, the spinous processes of the vertebrae, the malleoli, the ends of the radius and ulna, the knuckles, the scapulae, the crest of the ilium, and over tendon sheaths at the wrist and ankle. These nodules occur in almost 40 per cent. of cases, including rheumatic heart disease without articular symptoms. The presence of these nodules *alone* is an evidence of rheumatism, and may determine the nature of pains in the limbs and of cardiac murmurs. These nodules are at times also present in chorea, a fact indicating the relationship of this disease to rheumatism.

It is important to recall that acute sore throat or tonsillitis may appear just before the onset of rheumatic pains in children, probably as a medium of infection. In this connection, therefore, when called to see a child with sore throat, it is well to anticipate the possibility of rheumatism by the administration of anti-rheumatic remedies until reasonably certain that rheumatic manifestations will not occur. It is also interesting to note that certain minor symptoms in rheumatic children, though not necessarily diagnostic, occur with such frequency as to demand attention as being somewhat related to rheumatism. Children suffering with occasional pains in the limbs or with rheumatism often complain of pain in the epigastrium, at times severe enough to make the child cry. "Pain in the side" is another symptom often associated with rheumatic manifestations of the heart or joints. A very common complaint in rheumatic children or those in whom there is an inherited tendency to rheumatism is headache, often associated with anemia. Other symptoms commonly observed in rheumatism in children are extreme nervousness, habit spasm often resembling chorea, and an irritability of the intestines often amounting to a lienteric diarrhea.

The importance of an early diagnosis of rheumatism in children, therefore, will be realized, as it is only by prompt measures that we may avoid the pitiable picture of a child dying from cardiac rheumatism. The case presenting the mildest joint symptoms may give rise to the most severe cardiac disease. The only way to avoid overlooking heart disease in children is to make it a practice of thoroughly examining the heart of every child no matter what the reason may be for seeking medical advice. Where there have been "growing pains," chorea, or tonsillitis, the heart should be examined repeatedly.

In the child *dilatation* of the heart occurs very easily and rapidly, and this may be the earliest evidence of heart disease. For this reason a careful estimation of the size of the heart, to determine the area of absolute dullness even in the absence of a murmur, may reveal the coming danger. A child with or without joint symptoms will present slight increase in cardiac dullness with perhaps some irregularity and increase in rapidity of the pulse rate, associated with an alteration of the first apical sound several days and often weeks prior to the occurrence of a systolic murmur and other evidences of endocarditis.

The differential diagnosis of rheumatism in children must embrace infantile scurvy, acute osteomyelitis, foreign body in the joints, especially the knee, tubercular disease of the joints, and syphilitic epiphysitis. Neiserian arthritis has been mistaken for rheumatism, but closer observation, especially in the presence of a gonorrheal ophthalmia or vaginitis will clear the diagnosis.

In conclusion, it would be applicable to say something concerning the use of antipyretics in children. Of course, sponging of the child and the drinking of plenty of water constitute the simplest and safest antipyretic measures. Every physician uses a favorite "fever mixture" containing such substances as the citrates, acetates, and the spirits of nitrous ether. When rheumatism is suspected the salicylates and their derivatives are quite satisfactory in reducing temperature. In the absence

of such contra-indications as irritability of the urinary tract, middle ear disease, and inflammatory affections of the cerebro-spinal axis, the old "stand-by" *Quinine* is beyond a doubt the most reliable antipyretic. *Euquinine*, the tasteless quinine, is *par excellence* the antipyretic for children.

1714 No. 7th Street.

[Contributed to MERCK'S ARCHIVES]

HYPODERMIC MERCURIALS

By George L. Servoss, M.D., Gardnerville, Nev.

AT the present time we find many of the salts of mercury employed in the treatment of syphilis, as well as other diseases, by the hypodermic method. While it will not be our attempt to go into detail relative to the application of these various salts, the dose and application, in brief, of each will be given. Reference is made to Merck's Index, 1907, relative to this class of chemicals.

Mercury Aminopropionate (*Mercury Alanin*).—Alterative and antisyphilitic. Hypodermic dose, $\frac{1}{12}$ to $\frac{1}{6}$ grain.

Mercury Anilinate.—Antisyphilitic. Injected intramuscularly in 30 to 35 per cent. suspension in liquid petrolatum.

Mercury Asparaginate.—Used in treatment of syphilis. Hypodermic dose $\frac{1}{12}$ to $\frac{1}{6}$ grain, per day.

Mercury Benzoate (*Mercuric*).—Used in syphilis and skin diseases. Merck gives the hypodermic dose as follows: 15♏ (1 Cc.) of solution of 0.25 Gm. mercury benzoate; 0.25 Gm. sodium chloride, and 30 Cc. water, per day.

Mercury Bichloride.—Used in syphilis, chronic rheumatism and skin diseases. The following formula may be employed for hypodermic use:

Mercuric Chloride	0.1	Gm.
Sodium Chloride	1.	Gm.
Water	100.	Cc.

M. Sig. Use 8 to 15♏ for each injection.

Mercury Cacodylate (*Mercuric*).—Used in syphilis and was claimed at one time to be a specific and rapid cure. The dose for intramuscular injection is ½ grain, per day.

Mercury Cyanide (*Mercuric*).—Used instead of the bichloride and said to be less irritating. Indicated in syphilis, diphtheria and membranous croup. The hypodermic dose is given as $\frac{1}{12}$ grain.

Mercury Diiodosalicylate (*Mercuric*).—Used in syphilis. Applied intramuscularly in 10 per cent. suspension in liquid petrolatum.

Mercury Ethylchloride.—Used instead of mercuric chloride as an injection, and in the same indications.

Mercury Glycocholate.—Indicated in syphilis. Made up in stable solution, the dose of which is 8 to 15♏ every second day. This represents $\frac{1}{12}$ to $\frac{1}{6}$ grain of mercuric oxide.

Mercury Iodate (*Mercuric*).—Antisyphilitic. Subcutaneous dose $\frac{1}{6}$ to ¼ grain every second or fourth day.

Mercury Lactate (*Mercurous*).—Indicated in syphilis. Hypodermic dose 15♏ of a 1 per cent. solution daily.

Mercury Oxide, Yellow (*Mercuric*).—Antisyphilitic. Exhibited intramuscularly, every eight days, 1 Cc. of a 1:30 suspension in olive oil.

Mercury Resorcinolacetate.—Antisyphilitic. May be given by hypodermic method as follows: 3♏ of a solution of 85 grains of the salt in 85 grains of liquid paraffin and 30 grains of anhydrous lanum, twice weekly, the mixture to be warmed to 25° C. before use.

Mercury Salicylate (*Basic Mercuric*).—Antisyphilitic, antigonorrheal, alterative. Hypodermic dose, ⅓ grain, and maximum dose, per day, 1 grain.

Mercury Succinimide (*Mercuric*).—Antisyphilitic and alterative. Hypodermic dose, $\frac{1}{5}$ to ⅓ grain. (See p. 354.—Ed. M. A.)

Mercury Thymolacetate (*Mercuric*).—Indicated in syphilis, tuberculosis, etc., and injected intramuscularly, 1½ grains in liquid paraffin or glycerin every three to five days.

Mercury Thymolate (*Mercuric*).—Indications and uses same as of the Thymolacetate, the latter being preferable.

Mercury Thymolnitrate (*Mercuric*).—Indications and uses same as of thymolacetate.

Mercury Thymolsalicylate (*Mercuric*).—Indications and applications same as of thymolacetate.

Mercury Tribromphenolacetate (*Mercuric*).—Antisyphilitic, and used hypodermically in syphilitic joint diseases, in scrofula and tuberculosis. The dose is given as follows: 8♏ of a mixture of 100 grains of mercury tribromphenolacetate, and liquid paraffin 4½ drams, once a week.

Mercury and Ammonium Bichloride (*Mercuric*).—Antisyphilitic and alterative. Hypodermic dose, ⅓ grain in 8♏ of water.

Mercury in oil, in various strengths is also employed hypodermically.

LOOK OUT FOR THE EDGE of the lesions in cases of chronic cicatricial ulceration of the lower extremities. Cases of lichen planus hypertrophicus have often been mistaken for syphilis, and *vice versa.*—Urologic Rev.

THE TECHNIC OF SPINAL ANESTHESIA*

By W. Wayne Babcock, M.D., F.A.C.S.,
Professor of Surgery in the Medical Department of Temple University; Surgeon to the Samaritan Hospital, Philadelphia.

The introduction of a local anesthetic within the dura is followed by a more or less complete arrest of conduction in those spinal nerve roots that come in contact with the solution. If the solution is sufficiently concentrated there is complete arrest of motor, sensory and sympathetic conduction of the segments affected. The effect upon the cord proper is relatively slight and it is often possible under high spinal anesthesia to demonstrate evidences of conduction along the paths of the cord. With weak anesthetic solutions sensory conduction may be arrested with but imperfect loss of motor or sympathetic conduction, while very weak solutions may cause only an imperfect analgesia. As would be expected, the loss of protopathic or pain sense involves a wider area and is more intense than the loss of epicritic or touch sense. Patients may, therefore, feel the knife, although it does not hurt them, or they may complain that alcohol burns the skin, although they do not recognize the incision of tissues. The duration of intradural anesthesia is influenced by the dosage and concentration of the drug employed and varies from twelve minutes to two hours. One to one and one-half hours is the average duration for the adult.

The most effective percentage strengths for intradural use we have found to be 4 per cent. for stovaine, 4 or 5 per cent. for tropacocaine, and 7 or 8 per cent. for novocaine. The weaker solutions give too light and transient an anesthesia and tend to become too widely diffused, while the stronger solutions are so concentrated as to diffuse imperfectly, limiting their area of action and at times increasing their danger. To secure efficiency when using a strong solution, the operator may be tempted to increase the dosage. For example, Jonnesco, who uses a 10 per cent. solution for lower spinal work, advocates nearly twice what we consider a normal dosage. Five or six centigrams of stovaine in 4 per cent. solution will give an analgesia that lasts about ninety minutes; two or three centigrams of stovaine in 4 per cent. solution will produce an analgesia that lasts about fifteen or twenty minutes. It follows that in very young children, for whom only small doses may be given, prolonged operations are not conveniently done under spinal anesthesia.

Spinal anesthesia acts with great rapidity, the analgesia appearing within a few seconds after the injection and being rapidly followed by loss of motor power and muscular sense. With the average adult dose the analgesia reaches its intensity about fifteen minutes after the injection, and then gradually fades. First the motor loss and muscular sense gradually return, the sympathetic regains its tone, the area of epicritic loss becomes gradually reduced, and finally the area of protopathic arrest disappears. The effect is tide-like, the influence gradually spreading upward along the cord until the highest nerve roots in the effective range of diffusion of the drug are affected, and then the wave of analgesia recedes. This tide, which washes upwards and then returns, is not so clearly noticeable in a downward direction, although when a small dose of the analgesic has been injected near the upper part of the cord, there may be observed waves of analgesia passing simultaneously upward and downward, to reach their intensity and widest limits, and then gradually recede toward the segments close to the point of injection. As the analgesic wave diffuses upward the strength of the drug is weakened by the diluting cerebrospinal fluid. For this reason the nerve roots near the apex of the wave are more lightly and transiently affected than the nerve roots first washed by the injection.

For prolonged and complete analgesia it is desirable, therefore, to make the injection if feasible into the dura through an interspace adjacent to the nerve roots that supply the field of operation. Thus for operations upon the perineum or anus the injection is especially effective if made through the third or fourth lumbar interspace; for operations upon the leg, through the second lumbar interspace; for the lower abdomen or groin, through the first lumbar interspace; while for operations upon the stomach, gall-bladder or liver, the injection is most effective when given through the eleventh or twelfth dorsal interspace. With a minimum dose injected through the twelfth dorsal interspace, although the analgesia may be sufficient for upper abdominal work, it may be transient and patchy for operations upon the legs or perineum. It is obvious that the operator who injects the solution through the fourth lumbar interspace and then attempts to do a gastro-enterostomy, will condemn the anesthetic as ineffective and unreliable, as may also the operator who attempts an operation upon the toes after injecting a small quantity of the analgesic in the twelfth dorsal interspace.

The injection of weak solutions in the

*Read before the American Assn. of Anesthetists, American Jour. Surgery, Oct., 1914.

lower part of the cerebrospinal canal is relatively safe, for as they diffuse upward toward the phrenic nerve roots of the cervical region they are so weakened as to have little effect. Weak solutions injected in the middle or upper dorsal region or in the cervical region are, however, dangerous, as they interfere with the innervation of the muscles of respiration. Strong solutions of high specific gravity injected in the lower part of the arachnoid cavity may be dangerous by upward gravitation unless watchful care is taken not to elevate the pelvis until a sufficient time has elapsed to permit the absorption of the bulk of the drug. It should be evident, therefore, that for successful spinal anesthesia the operator should not only understand clearly the physiologic action, but should understand the dosage and the interspace most suited for the special operation to be performed. The operator should also realize the transient nature of spinal analgesia and should be prepared promptly to start the operation after the injection; otherwise valuable time may be lost and the patient may emerge from the influence before the operation has been completed. Although spinal anesthesia is relatively safe and very effective when used skilfully, it is an exceedingly dangerous and unreliable anesthetic in the hands of those who do not understand its action.

SOLUTIONS EMPLOYED

My associates at the Samaritan Hospital and myself have now operated under spinal anesthesia over 6,000 times.

Personally, we prefer solutions in ampules, on account of their convenience, accuracy, known specific gravity and greater assurance of sterility. In any case the preparation should, as far as is possible, be of unquestioned reliability. Unfortunately this is not always assured, and we have found living micro-organisms in solutions upon the market.

One of the problems in spinal anesthesia has been to produce a sufficiently high effect for upper abdominal work. This may be accomplished, first, by selecting a high interspace for the injection; second, by withdrawing a considerable quantity, 5 to 15 Cc., of cerebrospinal fluid, adding the drug and reinjecting or injecting a corresponding quantity of the analgesic in weak solution; third, by employing gravity to retain the solution in contact with the selected nerve roots. This latter method is based upon the fact that any solution introduced within the cavity of the arachnoid rises or falls according as its specific gravity is heavier or lighter than that of the cerebrospinal fluids. By adding glucose, milk sugar or mannitol the specific gravity of the solution may be increased, and by giving the injection of such a heavy solution with the patient upon his side, his shoulders and hips elevated, and then cautiously rolling the patient on his back while still maintaining the elevation of the hips and pelvis, the heavy solution remains in the most dependent portion of the dural cavity, the lower dorsal region. This is the method elaborated by Barker. As it is frequently desirable to operate with the patient in the Trendelenburg posture, or to lower the head of the patient for circulatory depression, I have for several years chiefly used a solution lighter than that of the cerebrospinal fluid.

Cerebrospinal fluid has a specific gravity of about 1.0055. The addition of a 10 per cent. absolute alcohol to a 4 per cent. solution of stovaine reduces its specific gravity to about 0.992. This light solution ascends in cerebrospinal fluid with a speed somewhat approximating 10 centimeters per minute. Stovaine has the property of alkaloids of being precipitated by alkalies, and therefore a minute quantity of lactic acid is added to the solution to retard precipitation by the alkaline cerebrospinal fluid. In case it is desirable to elevate the head and shoulders of the patient during the operation, a solution made heavy by the addition of 5 per cent. of milk sugar is employed. The following are the formulas that we have found useful:

Light Solutions.

A.	Stovaine	0.08 Gm.
	Lactic Acid	0.04 Cc.
	Absolute Alcohol	0.2 Cc.
	Distilled Water	1.8 Cc.
B.	Tropacocaine	0.1 Gm.
	Absolute Alcohol	0.2 Cc.
	Distilled Water	1.8 Cc.
C.	Novocaine	1.16 Gm.
	Absolute Alcohol	0.2 Cc.
	Distilled Water	1.8 Cc.

Heavy Solution.

D.	Stovaine	0.08 Gm.
	Lactic Acid	0.4 Cc.
	Milk Sugar	0.10 Cc.
	Distilled Water to make	2 Cc.

The solutions are kept in sealed ampules each containing 2 Cc. of the solution. They should be prepared under aseptic precautions and sterilized by the intermittent method at a temperature about 65° C. Although manufacturers sometimes contend that these substances withstand the temperature of boiling water with impunity, we have found boiled solutions objectionable. The dose for the adult of each solution is from 1 to 1½ Cc. Novo-

caine is the weakest of the anesthetics, is not precipitated by the cerebrospinal fluid, and does not hemolyse blood. It does not produce as satisfactory a loss of epicritic sense and motor power as solution A, which at the present time we prefer. Solutions extemporized from powders or tablets I have abandoned from fear of bacterial contamination.

SELECTION OF THE PATIENT

We have employed spinal anesthesia in patients of all ages, from the new born to those of advanced life. It may frequently be employed where ether is inadmissible or has produced dangerous symptoms. Probably no anesthetic gives as great a degree of muscular relaxation with as little danger as spinal anesthesia. As a rule, patients who have a marked hypotension of the circulatory system, or those in whom a marked reduction of vasomotor pressure would be dangerous, should not have spinal anesthesia. Should it be administered to such a person a cannula should be tied in a vein of the arm connected with a funnel of salt solution before the intradural injection, and any dangerous fall of blood pressure counteracted by the cautious intravenous introduction of the salt solution containing adrenalin. By this expedient, I was enabled to successfully carry a patient, at the beginning pulseless and apparently moribund from a ruptured uterus, through a Porro operation. A patient pulseless or nearly pulseless from traumatic shock should not, as a rule, be given spinal anesthesia until reaction has occurred. Patients with advanced peritonitis, with great abdominal distension and cyanotic extremities, are not good subjects for spinal anesthesia; especially is this true of the middle-aged obese patient. Patients in collapse from traumatic ileus do not well withstand the hypotension of spinal anesthesia. Patients with advanced septic disease of the biliary system and associated marked myocardial weakness are also bad subjects. The method is contraindicated in patients greatly depressed and toxic or with mechanical limitation of respiratory space, as from large pleural effusions or pus or serum, or massive intrathoracic growths. In patients in collapse from hemorrhage, the intradural injection should be made with great caution. Obese patients with short, thick chests and limited breathing apparatus are less favorable than patients with large respiratory mechanisms. Those very depressed patients who may be carried through an operation by local anesthesia or a few whiffs of ether should not be given the intradural injection. Patients with large fibroid tumors and myocardial degeneration should be given the injection with great caution. The aged and debilitated should be given relatively small doses. Young or middle-aged adults of the robust type, patients with the hypertension of renal disease or eclampsia are good subjects for the injection. Children withstand relatively large doses. Thus 1½ cgm. of stovaine may be given to the new born; 3 cgm. to a child of five; 4 cgm. to a child of ten. The proportionate size and robustness of the child are more important than the exact age.

PRELIMINARY NARCOTISM

The retention of consciousness within the operating room is often objectionable, and in many instances this may be obviated by the preliminary injection of narcotics. We have employed morphine and scopolamine chiefly. For a robust adult 1/6 of a grain of morphine sulphate with 1/100 of a grain of scopolamine or hyoscine hydrobromide is given by hypodermatic injection about seveny-five minutes before the time of operation. If in twenty minutes the patient answers questions without evidence of mental confusion the injection is repeated; while for certain very robust and resistant patients a third injection of morphine either alone or combined with a 1/15 of a grain of apomorphine if the delirifacient action of the scopolamine predominates, or of both morphine and scopolamine if the previous injections have produced little effect, is given. These injections should be given at intervals of about twenty minutes and should be used with great caution or avoided in the debilitated, toxic or aged patient. In patients under thirty the delirifacient action of hyoscine or scopolamine often predominates and is objectionable. In these patients the initial dose of morphine may be ¼ grain in combination with 1/50 of a grain of atropine. In children narcotics are rarely required. After the intradural injection, if properly reassured the child usually quickly adjusts himself to the environment of the operating room, and when convinced that the numbness and loss of power of the legs are quite proper, the little patient often will fall asleep during the operation. Narcotics intensify and by reducing epicritic sense increase the duration of spinal analgesia. When properly used they enable the patient to pass through the operation oblivious of the fact that he has been removed from his bed, and often strongly protesting on awakening that he has not been operated upon or even been asleep.

While narcotics render the patient oblivious of the operation, they increase the danger of spinal anesthesia or of any other anesthetic that may be administered, as they depress the centers of the central nervous system, suppress certain metabolic processes and produce undesirable, although often transient, alterations in the parenchymatous organs. In the asthenic, shocked, debilitated or aged patient they should be used with the greatest care or avoided. Preceding or during spinal anesthesia consciousness may also be dulled by the administration of ether or other anesthetic by inhalation.

ASSOCIATED LOCAL ANESTHESIA

Local anesthesia is at times of value in association with spinal anesthesia to extend the incision above the level of the analgesia or to prolong the intradural effect which may partly pass off before the operation has been completed. Likewise, in very extensive amputations, it is desirable to employ Crile's method of nerve blocking in association with the spinal analgesia.

AFTER-TREATMENT

Immediately after the operation patients who have received narcotic injections usually are given a large enema. Two quarts of warm water to which may be added 2 ounces of glucose and 3 drams of sodium bicarbonate are slowly run into the bowel, and each fourth hour thereafter for the first twenty-four or forty-eight hours the patient receives from 4 to 8 ounces of fluid by rectum. If the narcosis is too prolonged or intense, there is incorporated into the first enema a pint of black coffee and 2 drams of tincture of capsicum. The deeply narcotised patient must constantly be watched until awake and if there is any evidence of cyanosis or of obstruction in the upper air passages, the tongue and lower jaw must be held forward in such a manner as to give a free air way. In several instances death from suffocation has resulted from failure to observe this rule in patients comatose from scopolamine morphine.

METHOD OF INJECTION

Before being brought to the operating room the back of the patient is scrubbed with acetone and painted with a 2½ per cent. tincture of iodine. A dry sterile binder is then applied. In the operating room the patient is seated across the operating table so that he sits well back from the edge of the table. The dressing is then removed and the back either flushed with alcohol or given a second coat of one-half strength tincture of iodine. The assistant observes that the patient sits squarely across the table, that the hips are even, that the elbows are parallel and at the sides of the patient, and that the forearms are crossed in front of the patient's body. Facing the patient he then stands on a low stool, holds the patient's hands with his right hand, while his left arm encircles the back of the patient's neck and his fist makes pressure against the patient's abdomen. The patient's chin is thus forced down upon his chest, the back is arched, but the patient should not be permitted to lean forward. The desired spinal interspace is now selected.

Point of Injection.—The point of injection for an abdominal operation should be approximately on a plane with the operative area. Thus for operations upon the stomach, liver or gall-bladder, injections through the twelfth dorsal interspace give the best analgesia. For operations upon the lower half of the abdominal cavity, the first lumbar interspace; for operations upon the leg, the second or third lumbar interspace; for operations upon the perineum, the fourth lumbar interspace may be selected. Practically most of our operations have been done by injections through the first or second lumbar interspace with an occasional twelfth dorsal injection when it was desired to thoroughly anesthetize the upper abdomen. As a rule, the lower point of injection is safer, as the involvement of the upper dorsal nerve roots interferes with the respiration and increases the fall of blood pressure.

Apparatus.—A syringe of 2 Cc. capacity of the Luer type is preferred. If properly made, the piston of such a syringe fits loosely enough to be forced out by the pressure of the intradural fluid. This is important as showing that the needle has properly entered the arachnoid. The Record syringe is rather heavy, and the piston does not move with sufficient ease. To insure delicacy of manipulation the needle should likewise be small and light. It should be of iridinized platinum or gold to avoid breakage; have a length of about 7 centimeters and a diameter of 1/10 centimeter. A well fitted stylet should be provided so that the needle cannot become clogged in the introduction. The syringe, needle and stylet should be wrapped in gauze and boiled just before using, in water free from alkali, for fifteen minutes. The apparatus should be brought to the operator while still boiling hot not only to insure sterility, but also to serve to warm the anesthetic solution. The assistant now wipes the surface of an ampule with a bit of gauze moistened with alcohol and breaks

the ampule at its neck. The contents of the ampule are drawn into the syringe, and air bubbles and excess of solution expelled. For an adult, the syringe usually should now contain from 1.2 to 1.5 Cc. of the solution. The needle containing the stylet should be entered close to the midline at right angles to the body and about the middle of the interspace. It should be carried directly forward until it is felt to be grasped by the dense interspinous ligament. Only in the dorsal region it is necessary to tilt the needle somewhat upward. In the lumbar region the greatest success is obtained by entering the needle at right angles to the surface of the body. Following this rule I have failed to enter the spinal cavity only once in over 4,000 personal cases, the failure being in the case of a kyphotic dwarf. If the patient shows a scoliosis do not enter the needle in the midline of the body, but along the midline of the spinous processes, and pass the needle directly forward instead of attempting to deviate it to the midline of the back. The grasp of the needle by the cartilaginous interspinous ligament usually indicates that the needle is passing in the proper direction. After penetrating the ligament the stylet is withdrawn and the needle pushed forward a few millimeters at a time. The hand notes the cessation of resistance as the needle passes through the interspinous ligament and enters the loose areolar space external to the dura, and finally the slight resistance succeeded by a snap, as if a drumhead had been punctured, when the needle penetrates the dura. If the needle being rather dull does not immediately puncture the dura, it is given a partial rotation so that its edge may cut through the dura. As soon as the dura is entered, cerebrospinal fluid should begin to drop from the needle. If it does not do so, the needle is cautiously rotated and slightly moved until there is a free flow of fluid. At times it is necessary to reintroduce the stylet, make a very cautious aspiration with the syringe or to seek another interspace. If there is much difficulty with the first attempt, it is usually best to try another interspace. At times, if the needle enters directly in the median line, the plexus of veins external to the dura will be punctured and a few drops of blood may flow from the needle. We have observed no evidence of harm from this injury, and the flow of blood is usually quickly succeeded by clear cerebrospinal fluid. With the cerebrospinal fluid running freely, *and only when it is running freely*, the charged syringe is affixed to the needle. The piston is first withdrawn a short distance to permit the cerebrospinal fluid to enter and mix with the solution, as well as to again prove the proper introduction of the needle. If a thorough diffusion is desired a part of the solution is now injected, more cerebrospinal fluid is withdrawn by the syringe, and this procedure repeated two or three times until the syringe is empty. The needle is now quickly withdrawn, and if a light solution has been used, the patient immediately laid upon the table, which is so tilted that the shoulders are 2 inches below the level of the hips. This is to prevent an undesirable upward diffusion of the drug. Not over twenty seconds should be consumed in the injection.

The pulse and respiration are now continuously watched, the latter by the movements of a wisp of cotton affixed to the end of the nose. If the patient is awake, diverting conversation is often desirable, and if not contraindicated by the operation small bits of ice or sips of water may be administered. If the patient is very weak an injection of 4 grains of caffeine and 1/15 of a grain of strychnine sulphate is given subcutaneously to anticipate any respiratory depression. A nearly pulseless patient should also have a needle, connected with a funnel containing physiologic salt solution, tied into a convenient vein. The salt solution is permitted to run into the vein from time to time as may seem to be indicated, and to each 6-ounce funnelful is added from 1 to 10 drops of adrenalin. The adrenalin must be used with caution and we do not add it unless the patient becomes pulseless at the wrist. The flow of adrenalin is also to be cut off by pinching the tube as soon as the pulse returns, for fear of an excessive action upon the heart. For weak patients not sufficiently asthenic to require the intravenous use of adrenalized salt solution, the subcutaneous injection of one ampule of pituitrin at the onset of the operation may be of value. For nervous faintness, the inhalation of aromatic spirits of ammonia or a few drops of ether may be tried.

Should the patient show evidence of nausea, the head and shoulders are lowered to a greater degree by inclining the table. Should respirations become shallow or imperfect, then artificial respiration by compression of the thorax must be resorted to. It should be continued if necessary for one hour or more, until the patient is able to resume spontaneous respiration. If the patient be so obese or the intrathoracic condition so interferes as to prevent artificial respiration by compression of the thorax, then forced artificial respiration should be tried. In such an emergency we doubt the value of the Meltzer intra-

tracheal method. The pulmotor, if quickly available, may be used. In a sudden emergency we can certify to the value of a full size tracheal tube and the direct rhythmic inflation of the lungs by the surgeon or assistant. Using a piece of drainage tube that is cut off square at the end, pressed over the opening of the tracheal tube, the surgeon inhales deeply and inflates the patient's chest by blowing through the rubber tube. Exhalation occurs when the tube is lifted from the external plate of the tracheal tube. The pressure of the inflation cannot be harmful for an adult, as it cannot exceed or indeed reach the pressure within the surgeon's chest. While this method involves the dangers of a tracheotomy wound it may be quickly carried out with but few instruments.

AFTER-TREATMENT

No special after-treatment is required. In over 6,000 punctures without an occlusive dressing none have shown any signs of infection, so that we consider the sealing or dressing of the point of puncture unnecessary. The head and shoulders should not be elevated until one hour has elapsed from the time of injecting a light solution. Secondary headaches should not occur, and when of the characteristic spinal type, that is when they are increased by raising the head from the pillow, are associated with some stiffness of the posterior muscles of the neck, they indicate the use of contaminated or decomposed solutions. Such solutions may not only cause intense headache, but also abducens palsy, and should be promptly discarded. We do not believe that abducens palsy follows the employment of pure solutions. The anesthetic does not contraindicate the prompt administration of water either during or soon after the operation, and such food is given as in the particular case seems best without regard to the fact that the patient has been anesthetized. Secondary nausea or vomiting should not occur as a result of spinal anesthesia, and the patient should have less post-operative pain, less headache, less backache and general discomfort than the patient who has received ether. Finally, it is to be emphasized that the novice should not attempt spinal anesthesia without carefully investigating the subject, and should only use the method upon robust patients until he acquires dexterity and familiarity with the technic.

2033 Walnut Street.

THINK OF ARSENIC or silver in all cases of obscure pigmentation of the skin.

THE PRESENT STATUS OF ORGANIC IODINE PREPARATIONS*

By Franklin C. McLean, M.S., M.D., of Portland, Ore.

THE flood of organic preparations of the various metals introduced into therapeutics during the past few years has carried with it a considerable number of organic preparations of the non-metallic elements, chiefly the iodides and bromides. The advantages of these preparations over the older inorganic combinations have in general not been carefully considered by the makers or users, but the popularity earned by the organic preparations of arsenic and mercury has led manufacturers to seek new fields of endeavor. In a previous communication[1] I reviewed the evidence regarding the various organic iodine preparations on the market. Since that time some new evidence has been brought forward, and a summary of our knowledge at the present time seems desirable.

The larger number of commercial preparations resolve themselves naturally into two classes: (1) iodine products of the higher fats or fatty acids and (2) iodized albumins. These two classes are so dissimilar that they must be considered separately.

The chief iodized fats and fatty acids on the market at the present time are *Iodipin* (*Merck*), Sajodin (*Farbenfabriken von Elberfeld*), and *Iodival* (*Knoll & Co.*). These substances are products of the addition of iodine to the higher fats or fatty acids or their derivatives, and contain varying amounts of iodine. They are sufficiently similar in their characteristics to allow of their being considered together. The advantages over the alkaline iodides claimed by the manufacturers are chiefly as follows: (1) absence of gastro-intestinal irritation, (2) slower absorption, (3) longer retention in the body and a more uniform rate of excretion, and (4) less tendency to produce iodism. The first claim is in general well substantiated, as all of these substances are bland and unirritating, the iodine being so firmly bound in the molecule as to be inactive locally. These substances are in general absorbed without much change in their composition, the absorption being similar to that of fatty acids, and much slower than that of the alkaline iodides. While 75 per cent. of

*From the Department of Pharmacology, Med. Dept., University of Oregon.

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[1] McLean, Franklin C.: Organic Iodine Preparations, their Pharmacology and Therapeutic Value, Arch. Int. Med. Nov. 1912, p. 505.

the iodine given in the form of potassium iodide is excreted in the urine within twelve hours, and the highest amount in the urine is in the second hour, the absorption and elimination of the iodized fats is much slower. When Sajodin is given, iodine does not appear in the urine until after from one to three hours, and while the highest point in the excretion is reached within twelve hours the amount excreted remains high for thirty-six hours, giving a much more uniform rate of excretion. Following absorption, as shown by me,[2] the iodized fats are carried to the various parts of the body and deposited at least in part in the fatty or lipoid constituents of the cells, this agreeing with the theory of "lipotropie" advanced by Loeb. On this account the central nervous system, being rich in lipoids, is found to contain relatively much more iodine following the administration of an iodized fatty acid than after potassium iodide. After being stored in the lipoids of the cells these substances may, as suggested by Meyer and Gottlieb,[3] give off free iodine when the proper conditions are present. These facts explain the longer retention in the body and the slower excretion of iodine following the administration of these preparations. The iodine is excreted in inorganic form, and probably is effective in the body only after it is separated from the organic molecule. Its action and fate after separation from the organic combination would naturally be the same as if an alkaline iodide had been administered, and the only advantage gained would be in its being held and liberated more slowly, as no one of these preparations has been shown to possess a specific action beyond that of the iodine which it liberates. The fact that relatively more iodine is found in the nervous tissues probably has little bearing on the efficiency of these substances in cerebral syphilis, etc., as their lipoid solubility would not favor their entrance into syphilitic tissue. The lessened tendency to iodism claimed by many observers may be explained by the retention of the iodine in the lipoids and its slower and more uniform release in the form of available iodine. According to our present ideas iodism may be dependent on a high concentration of easily available iodine in the tissues. A high concentration may be reached for a short time by a relatively small dose of potassium iodide, but in the case of an iodized fat there is never this sudden flooding of available iodine. Where continuous small amounts of iodine are desired, as in arteriosclerosis, bronchial asthma, lead-poisoning, etc., this iodine may be supplied in a form non-irritant to the stomach as an iodized fat or fatty acid, and the probability of iodism would not be great. The iodized fats and fatty acids may be compared to the organic combinations of arsenic and mercury, in that they seem to allow to a certain extent the maximum of therapeutic effect with the minimum of toxic effect. When large amounts of iodine are desirable, however, as in cerebral syphilis, etc., the therapeutic effect seems to depend on the same property that causes the toxic effect, that is, the high concentration of iodine, and any effort to decrease the concentration would result in a sacrifice of therapeutic efficiency.

The iodized albumins on the market are chiefly Iodalbin (P. D. & Co.) and Iodocaseine (Mulford). They are relatively unstable, and Iodalbin contains some free iodine and much more easily available iodine. Its claim for classification as an organic preparation is thus only partially borne out. As would be expected from the availability of its iodine, iodine appears in the urine within a few minutes after its administration. As I have shown[2] it completely loses its identity during the process of digestion and absorption, and its iodine is not found in the body in combination with protein. Any advantage of these preparations over the soluble inorganic iodides must lie in their behavior in the gastro-intestinal tract. In this way they resemble the organic iron preparations, most of which are protein in nature.

It has been repeatedly demonstrated that the iron preparations are not absorbed until after digestion and that their only advantage over the inorganic preparations lies in their better tolerance by the gastro-intestinal tract. In the case of iodized albumins there may be a somewhat slower absorption, owing to the time required for digestion, but their action and fate following absorption is practically that of soluble inorganic iodides.

Iothion (Farbenfabriken von Elberfeld Company) must be given a separate classification. It is chemically di-iodo-hydroxy-propane, obtained by chlorinating glycerin and replacing the chlorine by iodine. It is recommended for local application and for percutaneous administration in solution in olive oil, and rapid absorption is claimed. It is apparently efficient in case percutaneous administration is desirable.

Another class of preparations, the iodized tannins, scarcely deserve classification as organic preparations. They are prepared

[2]McLean, F. C.: The Distribution of Iodine in the Cell Following Administration of Organic Iodine Preparations, Arch. Int. Med., to be published.

[3]Meyer and Gottlieb: Pharmacologie, Berlin, 1911, p. 358.

in the form of wines or syrups, and contain tannin with a small amount of loosely combined iodine. The action of the small amount of iodine they contain is the same as the action of a corresponding amount of potassium iodide, as they decompose rapidly in the stomach.

The conclusions to be derived regarding the organic iodine preparations designed for general iodine medication are as follows:

1. So far as we now know these preparations have no specific action beyond the action of iodine after separation from the molecule.

2. The iodized fats and fatty acids, when small amounts of iodine are desired, seem to combine the maximum of therapeutic effect with the minimum of toxicity, chiefly because of their retention in the body and the slower release of the iodine. They are not of advantage when a high concentration of available iodine in the tissues is desirable.

3. The iodized proteins may be of some advantage in so far as they prevent gastric irritation and retard absorption of the iodine. Their behavior after absorption is the same as that of the soluble inorganic iodides.

4. Iothion and Iothion Oil are available for percutaneous administration, when that is desirable.

5. The syrups and wines of the so-called iodized tannins display no advantage over the soluble inorganic iodides.

761 Lovejoy Street.

THE TREATMENT OF DISEASES OF VEGETABLE PARASITIC ORIGIN BY DEEP MUSCULAR INJECTIONS OF MERCURY*

By Barton Lisle Wright,
Surgeon, U. S. Navy.

In 1905 I first began the use of mercury in the treatment of tuberculosis, but it was not until 1907 that I had an opportunity to try out its value extensively. From then until 1910, when I was detached from the U. S. Naval Hospital for Tuberculosis, Las Animas, Colorado, to take my turn at sea, I published several reports of my results, some of which I will report later in this paper.

In 1910, while serving on board the *U. S. S. Nebraska*, I became intensely interested in Ehrlich's theory: That for every parasitic organism there is a chemical affinity, which if found and injected into the infected host, would destroy the infecting organisms, and therefore cure the specific disease.

His first successful experimental demonstration of this now well-known and recognized fact was made in connection with trypanosomiasis in mice by the injection of trypan red. After some experimental work he found that he could with great uniformity destroy all of the infecting organisms and absolutely cure the disease with one injection.

These experiments not only proved the correctness of his theory but developed two most important facts: (1) To produce the immediate curative effect the dosage of the initial injection must be extremely large; (2) Small and frequently repeated doses are not productive of rapid results, and when continued uninterruptedly unduly long, render the infecting organisms immune to their chemical affinity.

From my results in the treatment of tuberculosis with mercury, I was convinced that this metal was the chemical affinity of the tubercle bacillus. Granting this, why should it not bear the same relationship to the entire group of the vegetable parasites? After long consideration I was convinced that this must be the fact and developed my theory as follows:

For every vegetable parasite mercury is the chemical affinity, and when properly injected into the infected host will cure the specific disease. This is represented by a chemical formula as follows: (Vegetable antigen + Hg) + antibody + complement = complement fixation (cure).

I now believe that mercury has a dual parasitotropic action: First—primary or direct, in which the Hg by affinity unites with the organism and, without antibody, binds complement. Represented by formula as follows: Vegetable antigen + Hg + complement = complement fixation (immediate cure).

Total destruction of all the infecting parasites or of their virulency with immediate cure takes place. I am led to believe that this action is limited to the first few days after the onset of the acute infectious diseases, the period of time during which it will take place seeming to differ in each disease; in some it will be found to extend to the sixth day, in others probably only during the first or possibly the second day.

This is due, I believe, to changes in the organisms acquired by the prolongation of their existence in their new environment, by which they gradually lose most if not all of their affinity for mercury. I have never seen this action take place in a subacute or chronic infection.

*Read before the New Hampshire Med. Soc. and the Maine Med. Soc., Med. Record, July 11, 1914.

Second:—Secondary or indirect, for the reasons noted above, the affinity of the organisms for Hg having been partially or completely nullified, instead of uniting with them, Hg stimulates the rapid production of specific antibody. [1]

This secondary action takes place in two stages and may be represented by chemical formulæ as follows:

First stage: Vegetable antigen + Hg = stimulated specific antibody production. Second stage: Vegetable antigen + antibody + complement = complement fixation (rapid cure). These reactions take place in the late stages of acute, and throughout the course of subacute and chronic infections, producing as a rule marked beneficial, with rapid but not immediate curative effects.

It is probable that both the direct and indirect actions of mercury in these infections occur in every case injected; under certain conditions one or the other predominating, the other taking a subsidiary part in the cure.

It is obvious that, in addition to the large dosage required, rapid absorption is equally necessary; therefore, one of the soluble salts of mercury is absolutely indicated.

In my work I have selected mercuric succinimide because I believe that a larger dose of this salt can be injected than of any of the others, and at the same time its parasitotropic action is many times greater than its organotropic advantages, which from experience I do not think the other soluble salts possess to an equal extent.

Mercuric succinimide 1.8 grn. = metallic Hg 0.909 grn.

In general, from what I have previously said, it is obvious that in the early days of an acute infectious disease the maximum dosage is solely indicated, while in the late days of these diseases, or in subacute or chronic infections smaller and more numerous injections are to be used.

During the early days of an average acute infection in an average adult male, the initial dose of mercuric succinimide should be 9/5 grn.; if at the end of twenty-four or thirty-six hours there has been no improvement, or if, following improvement, there has been a return of symptoms, a second injection of from 5/5 grn. to 6/5 grn. should be given, providing symptoms of mercurialism have not followed the first injection. In the more virulent and quickly fatal of the acute infections, such as meningitis, whatsoever its etiology, the initial dose should be ii grn.

In chronic infections (late days of acute and in subacute infections) in the average adult male the initial dose should be 5/5 grn. to 7/5 grn.

Succeeding injections should then be given with from two to four day intervals, in such dosage as will not produce mercurialism, until ten or twelve injections have been given, providing the symptoms have not disappeared in the meantime. When ten or twelve injections have been given, the treatment should be interrupted for from two to five weeks, in order that the mercury may be eliminated and that the organisms may not become immune to its action through its constant presence in their environment.

In some of the more persistently chronic infections the interval of time between injections should be from four to eight days.

In females the dosage should average from 1/5 grn. to 2/5 grn. less than in males.

Should symptoms of mercurialism appear at any time during the course of treatment the injections should be stopped at once and appropriate corrective measures applied, the injections being resumed if necessary upon the disappearance of these symptoms.

During this treatment the oral cavity and the teeth must have the utmost attention and be kept perfectly clean at all times, and the bowels moved freely daily.

Surgical asepsis must be carefully observed in every particular relating to syringe, needles, solution, and skin at site of injection.

The solution should be made of the strength of mercuric succinimide 1.5 grn. in sterile, distilled water ♏ iv. Inject deeply in gluteal muscles.

The only contraindication to this method that I know of is serious organic lesions of the kidneys.

With the foregoing in view, I invite your attention to the following cases:

Tuberculosis (Thirty-five cases).—Between 1907 and 1910, at the United States Naval Hospital, Las Animas, Col., I treated thirty-five officers with this disease. They were not selected cases of incipient character, but ranged from moderately advanced to far advanced; one was a case of acute pneumonic phthisis that two months previously had been originally diagnosed typhoid fever. In addition to the lung involvement, two patients had tuberculosis of the knee-joint, one of the knee-joint and lower third of the femur, and one had tuberculous ulceration of the larynx.

I discharged from the hospital nineteen of these cases, or 54.2 per cent., as apparently cured, including the two knee-

[1] At least two investigators have reported during the past two years, that when mercury is introduced into an infected animal specific antibody is rapidly produced.

joint cases, and the case of laryngeal involvement.

Since then but five of these patients have relapsed, one of whom has died. Of the sixteen not apparently cured, in ten the disease has been arrested, and the men are leading a fairly normal existence in various parts of the United States.

Among these the knee-femur case may be specially mentioned. When I operated on this patient in 1909 I removed the inner half of the lower third of the right femur, and this bone was in such bad condition that my colleagues and assistants urged me to amputate at the hip. This patient is now living in New York City with a sound limb, though a stiff knee-joint.

It is also of interest to note that in the case which began as an acute pneumonic phthisis, reaching me with a large cavity in the upper left lobe, the patient is now married and living in the State of New York.

Two of these patients showed no change, two I have lost track of, and two died while not under my care.

Lobar Pneumonia (Nine cases)[1].—Of these eight were immediate cures following one injection; the crisis usually began in about seven hours after the injection, in several within an hour or so after injection. In one the injection was given on the first day of the disease, in two on the second, and in six on the third day. The case that was not immediately cured received three injections, the fever falling by lysis on the fifth day, the involved area never completely undergoing resolution, and the evening temperature reaching 100° to 99° for the following two weeks, when a diagnosis of tuberculosis was made and the patient transferred from the ship to hospital. The following is a fair example of the eight cases of immediate cures.

W—— S. A., 27 years of age. Admitted on board the U. S. S. *Southery* by P. A. Surg. L. H. Wheeler, U. S. N., at 9.00 A. M., Dec. 3, 1913. Chill—followed by cough, severe pain in apex of right lung and extreme nervous symptoms. Temp. 101.5°, pulse 90, resp. 20. Diagnosis undetermined—lobar pneumonia suspected. 3.00 P. M., all symptoms increased, temp. 104°, pulse 126, resp. 40, transferred to hospital. Dec. 4, 9.00 A. M., condition about the same, excepting that nervous symptoms had increased, and respirations were 68. Physical signs of consolidation of right apex. Surgeon F. M. Bogan, U. S. N., injected 8/5 grn. mercuric succinimide. Following this, rapid crisis took place. Convalescence established, which proved uneventful.

[The author exhibited a number of clinical charts illustrating the progress of the cases described.—Ed. M. A.]

It seems probable in cases of pneumonia complicated by preexisting pulmonary disease, more particularly tuberculosis or syphilis, whether active or latent, that the direct immediate curative action of mercury will not take place; therefore when such immediate cure does not follow the initial injection in the early days of the infection, the possibility of such complications should be considered.

Lobular Pneumonia.—Six cases of this disease have been treated, in all of which an immediate cure was obtained. In one, the action was somewhat delayed, due in this instance to infection of both middle ears, the latter condition not, however, progressing to suppuration; this in itself was gratifying, showing the value of mercury in preventing or at least aborting a complication that usually persists for some length of time.

B—— W. W. Disease began rather suddenly on June 13, 1913. Slight chill at 8.00 A. M., followed by severe cough; at 8.00 P.M., temp. 101.2°, pulse 118, resp. 48. June 14, 8.00 A. M., about the same, expectoration free and characteristic, the entire area of both lungs presented the physical signs of lobular pneumonia. 10.20 A. M., Surgeon Bogan injected mercuric succinimide 7/5 grn. Crisis began at 8.00 P. M., complete at 8.00 A. M., June 15. Convalescence uneventful.

G—— J. Male. Age 4 years. First saw patient at 10.00 P. M., Jan. 31, 1914. Cough developed the day before. Upper right lobe presented numerous subcrepitant rales, temp. 103.6°, pulse 132, resp. 36. Early lobar pneumonia suspected. Magnesium sulphate prescribed. By the following morning all symptoms had practically subsided and remained so during the day. Feb. 2 all symptoms increased. 1.30 P. M., chill. P. A. Surgeon Wheeler and myself saw the case together at 2.00 P. M., diagnosis of lobular pneumonia made. 2.20 P. M., injected mercuric succinimide 2/5 grn. At 6.00 P. M., right middle-ear became involved. Patient extremely restless, and crying from severe pain in this part. Hot water bag locally. Feb. 3, 6.00 A. M., apparently much worse, severe pain in right lung. Temp. 104.2°, pulse 130, resp. 48. Castor oil 15 Cc., administered. Improvement began by 9.00 A. M., and continued. Feb. 4, all pneumonic symptoms disappeared, convalescence apparently established. 3.00 P. M. pain in right ear returned, associated with rise of temperature, which rapidly subsided. Feb. 5, without symptoms until midnight when severe pain developed in left ear. Feb. 6, rise of temperature due to left ear involvement. Feb. 7, no symptoms. Feb. 8, up and about. Feb. 11, cured. Visits discontinued.

Typhoid Fever (Five cases).—In this disease I am under the impression that the sixth day is the limit of time during which the primary or direct parasitotropic action of mercury may be expected to take place. Therefore, up to and including this day the initial injection should be 9/5 grn. in average adult males, with a second injection of 5/5 grn. or 6/5 grn. in twenty-four hours if required. From the sixth to the tenth day the initial injection may be 9/5 grn., but the second injection must not be given until seventy-two or ninety-six hours have

elapsed. After the tenth day the initial injection in an average adult male must not be more than 5/5 grn., and succeeding injections not repeated more often than every seventy-two hours, the dose gradually decreasing at the same time.

The first case of this disease treated and reported[2] was injected with mercuric succinimide 7/5 grn. on the seventh day of the disease, the temperature then being 103°; by the following morning it was practically normal, but shot up to 102° during the day, when a second injection was given; a third and fourth injection resulted in normal evening temperature and the patient was out of bed and around the ship before the temperature would have reached normal in the usually treated case. In another week he went to his home on ten days' leave, and upon his return he presented himself with a large abscess in right lumbar region. Was transferred to hospital at Boston, Mass., where he was found to be suffering from "typhoid spine"; had he been injected earlier in the disease I think this complication would have been avoided.

The second case was admitted 7.00 P. M., March 25, 1912; stated that he had not felt well for a week or ten days. Complaint: headache, profound malaise, and constipation. Temp. 103.6°, pulse 95, resp. 20. Oleum ricini 30 Cc. Large movement of bowels 8.00 P. M. March 26, no change. Urine shows motile bacilli in large numbers. 10.00 A. M., temp. 104°, pulse 88, resp. 20. 4.00 P. M., injection mercuric succinimide 0.11 Gm. (17/10 grn.), immediate improvement. 10.00 P. M. temp. 102°, patient felt much better. March 27, marked improvement. 8.00 A. M., temp. 100°, pulse 80, resp. 20. Termination by crisis. From this time on convalescence uneventful, discharged to duty March 31, 1912, having been under treatment just seven days.

Paratyphoid (1 case).—Hospital apprentice reported to me at 7.00 P. M., one evening in Nov., 1912, saying that he had been feeling badly for a few days and had kept a chart of his morning and evening temperatures, thinking he had tuberculosis. The chart showed the typical rising curve of typhoid, and that evening had reached 102° (4th day). He was placed in bed on liquid diet, under observation. The following morning microscopic examination of urine showed numerous motile bacilli. Culture made and sent to the laboratory of U. S. Naval Medical School, Washington, D. C., for identification. That evening temperature reached 103°, and he was given 9/5 grn. of mercuric succinimide by injection. Following morning temperature was normal, but went to 102° in the afternoon when second injection 6/5 grn. was given. The following morning temperature was normal and remained so, and in three or four days he was returned to duty at his request. Some days later the laboratory reported the culture to be one of the Gartner group, none of which excepting *B. paratyphoid* B. would have produced the clinical symptoms of typhoid.

Cerebrospinal Meningitis (1 case).—In Dec., 1912, I was transferred to the Naval Hospital, Norfolk, Va., for treatment. Several weeks before they had received a case of cerebrospinal meningitis; the clinical symptoms and laboratory findings confirmed the diagnosis. Lumbar puncture with drainage and the introduction of antimeningococcic (Flexner's) serum was instituted at once and continued; the patient died during the sixth week of the disease.

About the middle of December his former roommate was admitted to the medical ward, about 4.00 P. M., diagnosis undetermined, health record stating that he had been taken sick suddenly the day previous, with moderate temperature and delirium. On admission the patient was delirious, and presented all the classical symptoms of cerebrospinal miningitis; this diagnosis (etiology not determined) was made. Mercuric succinimide, grn. ii, was injected at 4.20 P. M., and the patient was transferred to the contagious wards. A telegram sent to Philadelphia for Flexner's serum. At 7.00 P. M., lumbar puncture was done and 90 Cc. of extremely cloudy cerebrospinal fluid under great pressure withdrawn. This contained a large amount of pus, a high percentage of albumin, and was positive for the *Diplococcus intracellularis*. The following morning the temp. was 99°, blood pressure 187, the delirium had disappeared and the patient recognized the fact that he was in hospital. 10.00 A. M., lumbar puncture was done, the spinal fluid was almost clear, almost free from pus cells, with a faint trace of albumin. In spite of the very marked improvement the medical officer in charge of the case felt that he must administer serum, which was done, at the same time 8/5 grn. of mercuric succinimide was injected into the gluteal muscles; rapid improvement took place. The following morning he was still further improved; a second dose of serum was injected into the canal after drainage, and 5/5 grn. mercuric succinimide injected into gluteal muscles. The following day his condition was nearly normal, lumbar puncture and drainage was done. The next day (fourth since admission) patient normal, convalescence established. Mercuric succinimide grn. 4/5 injected. Following this convalescence was uneventful, resulting in complete recovery in every respect.

Erysipelas (Two cases).—First case on fourth day had upper half of face, including nose and ears, involved, temperature 106°, profound toxemia, delirium. Injections 8/5, 7/5, 5/5 grn. on successive days. After first injection delirium disappeared, maximum daily temperature did not go above 103°. Reaching port, patient was transferred to hospital.

Second case on the first day; nose involved, temperature 102.5°, injection 17/10 grn. at 10.00 a. m., following morning normal, all symptoms disappeared. Cured and to duty in forty-eight hours.

Infectious Arthritis (Thirty-nine cases)—*Acute Rheumatic Fever* (Eight[3] cases).—In this particular infection where the normal alkalinity of the blood is known to be reduced, I have found it advantageous to correct this by giving fairly large doses of potassium or sodium citrate or sodium bicarbonate either the day before or on the day of the injection.

The following cases are examples of the results that may be expected:

In the first case the patient was admitted to Naval Hospital, Portsmouth, N. H., Sept. 8, 1913, from the U. S. S. *Hannibal*, as with acute rheumatic fever. A Wassermann proved negative and the diagnosis was confirmed. All previous treatment discontinued. Injection mercuric succinimide 7/5 grn. At this time both shoulders, both ankles, and the joints of left hand

involved. Immediate improvement followed the injection. Sept. 11, injection 5/5 grn.; Sept. 15, pain about disappeared, injection 4/5 grn.; Sept. 16, practically well. A few more injections were given as precautionary measures. The heart did not become involved and the patient returned to his ship and duty perfectly well.

In the second case the patient was a boy, aged 9 years; I first saw the patient on March 5, 1914, which was about the twenty-second day of the disease, and confirmed a diagnosis of acute rheumatic fever, complicated by a severe endocarditis. Examination of the lungs was negative. Previous treatment aspirin, for which I substituted methyl salicylate and sodium bicarbonate, the family not being willing at the time for me to inject. On March 8 developed severe cough. March 9, morning, upper right lobe presented harsh respirations and subscrepitant rales. 10.30 A. M., injection mercuric succinimide 3/5 grn., 3.00 P. M., physical signs of consolidation entire upper right lobe posteriorly (confirmed by my colleague P. A. Surgeon L. H. Wheeler, U. S. N.). Some time after 6.00 P. M., crisis began and was complete by 4.00 A. M. All pain practically ceased also. March 14 injection of mercuric succinimide 2/5 grn., following which temperature became normal and has continued so.

Chronic Articular Rheumatism (Seven cases).—The following case is an average example:

Mrs.———, age 52, two adult children and one minor child. Perfect health until March, 1911, when she developed a severe attack of acute rheumatic fever, confined to bed until following June, since which time she has been a confirmed sufferer from chronic articular rheumatism. Came under my observation April 7, 1913. The heart, lungs, and abdominal viscera were apparently normal. Urine normal. Both knee joints, ankles, and the joints of both hands were considerably swollen, and extremely tender and painful. The lower limbs were edematous, and the abdominal cavity contained some fluid. The bladder was extremely irritable and painful. She was given the following injections of mercuric succinimide: April 11, 5/5 grn.; 13, 7/10 grn.; 16, 3/5 grn.; 20, 7/10 grn. All symptoms disappeared by April 24, and she remained apparently well until May 12, when the bladder symptoms returned. Injections resumed as follows: May 13, 9/10 grn.; 16, 7/10 grn.; 20, 7/10 grn. Since this date she has remained perfectly well, has resumed her social duties and pleasures, eats freely of an unrestricted diet and is normal in every respect.

Gonorrheal Arthritis (Twenty-four cases).—The following case is an average example:

Disease first treated at the Marine Recruiting office, Topeka, Kans., March 7, 1911, since which time he has been practically under continuous treatment, and has had several negative Wassermann tests. From Topeka, he was sent to the Post-Graduate Hospital, Kansas City, Mo., transferred to the Naval Hospital, Philadelphia, Pa., where he remained 59 days, being discharged June 14, "condition improved." Did duty at the Marine Barracks, Philadelphia and New York, up to January 24, 1913, during which time he was receiving treatment. Admitted to the sick list on board the U. S. S. *Southery*, Portsmouth, N. H., February 1, 1913. Transferred to hospital, Portsmouth, N. H., March 4, 1913, as "not improved."

U. S. Naval Hospital, Portsmouth, N. H., March 4, 1913; patient walked with great difficulty. The action of the heart was very rapid and irregular. Salol grn. xx, *t.i.d.* March 25, no improvement. April 7, rapid pulse continued (150 9.00 A. M.), no relief from pain. May 3, 1913, Surgeon F. M. Bogan requested the writer to ask for a survey on this man, with the view of having him discharged from the service, or in lieu of that to see the patient in consultation and suggest a line of treatment. Patient was bent forward at the hips, unable to extend the trunk into a vertical position. The right knee, considerably swollen, flexed, and fixed at an angle of 60°, was extremely tender and painful. The left knee and both ankles were involved, the bladder was extremely irritable. Temp. 100°, pulse 120, resp. 24. Weight 149 lbs. (normal 165). Injections of succinimide of mercury as follows: May 5, 7/5 grn.; May 7, 6/5 grn.; May 8, mercurialism; 11, improved, temperature 98°, pulse 82, injection 9/10 grn.; May 15, marked improvement, all pain practically disappeared; the swelling of the right knee had disappeared, there was perfect motion in the joint; he was able to stand perfectly erect and walked with great ease, injection 4/5 gr.; May 20, injection 3/5 grn. For the first time in two years he felt perfectly well, there was no limitation of motion in any joint, temperature and pulse were normal, weight 163 pounds. Since this date he has remained perfectly well. Lack of time prevents further details.

In addition to the above there have been treated by my method fifteen cases of acute tonsillitis, all immediate cures; five cases of epidemic catarrh, cures; one case acute cystitis (staphylococcic), immediate cure; three cases chronic cystitis (gonococcic), two to three injections (rapid cure); ten cases furunculosis, two to three injections; thirty-two cases of colon bacillus infection,[5] rapid cures; one case acute pleurisy, immediate cure; two cases lymphangitis, immediate cure; four cases cellulitis, two immediate and two rapid cures; one case of mumps, right parotid swollen and painful, left parotid painful, injected first day 9/5 grn., immediate cure; Vincent's angina, one case, rapid cure.

In addition to these cases, several independent foreign investigators claim and report the most excellent results from the use of mercury in the treatment of diseases of vegetable parasitic origin.

In October, 1912, Dr. Charles Souligoux, surgeon on the staff of the Hospital of Paris, Paris, France, reported to the Surgical Society of France 144 cases of puerperal septicemia treated by deep muscular injections of 1/6 grn. of mercuric cyanide daily, with but three deaths. This report was published in detail by his assistant, Doctor Giru, in the "Archives de Chirurgie" of Novmeber 25, 1912.

In the course of his practice in Kiev, Dr. P. Krohl[6] noticed that women who were undergoing a mercury treatment or who had recently finished one had a completely

normal puerperium after a normal delivery or an abortion, in spite of the fact that they lived under the most unfavorable hygienic conditions. "*Moreover I noticed that syphilitic patients during and after a mercury treatment had a peculiar power of resistance to infection of every kind. Not only did they not take the ordinary infectious diseases, but in chloera epidemics they seemed immune to that infection.*"

With this in view he started experimental work with seventy-eight rabbits, and an extremely virulent culture of streptococci. Dividing the rabbits into four groups—the first group of controls injected with streptococci but not mercury; the second group before infection with the streptococci had immunizing injections of benzoate of mercury; the third group received injections of mercury at the same time as in jections of streptococci; the fourth group did not receive injections of mercury until after the appearance of the symptoms of sepsis at various stages of its developments.

The animals of the first group all died of general septicemia, and in their blood large quantities of streptococci were found. The results obtained in the remaining three groups led Krohl to the following conclusions: "Giving a series of injections of benzoate of mercury in small doses (1.5 Mg. to kilogram of body weight) renders the organism for a time, the duration of which is not accurately determined, not susceptible to infection with streptococci. A smaller number of injections in larger doses gives the same result. *The giving of small doses of mercury before the beginning of the disease, or the injection of large doses in the early stages of the disease, prevents the development of general septicemia.* Too small and too late injections of mercury do not help the organism in its struggle with infection, and the sickness ends in death from general septicemia." Upon these grounds he resolved to use mercury benzoate in his practice, and reports a number of cases, the following being an example:

"N.——K. 29 years old. Three days after her second delivery had a chill, temperature 102.6°, pulse 128, skin dry. Patient restless, very thirsty. Thoracic organs normal; mammary glands also; abdomen not sensitive. Uterus well contracted. Discharge normal and in sufficient quantity. No external injuries of the genital organs. Intestines empty. On the first day injection grn. 1/6 hydr. benz., in the gluteus. Second day temp. 102.7°, pulse 120, injection repeated. Third day temp. 100.9°, pulse 112, injection repeated. Fourth day, temperature and pulse normal."

Krohl states: "I have observed a great number of such cases and they all showed the same favorable results, with the exception of those in which the injections were given too late."

During the past year Siemerling has reported excellent results in the treatment of meningitis by inunctions of mercury as recommended by Quincke.

On page 259 of the March (1914) number of "Progressive Medicine" Ruhräh cites the excellent results obtained by Carlo,[7] Singer, Maragliano, and others in the treatment of rheumatism by the "Baccelli method," which consists in the intravenous injections of bichloride of mercury.

Conclusions.—I believe that my results, coupled with those of the distinguished foreign observers above mentioned and of my colleagues in the Naval Medical Corps, mentioned in this paper, demonstrate the superlative value of mercury in the treatment of the infection cited, and make it strongly probable that its action in the case of all diseases of vegetable parasitic origin would be equally and as promptly curative.

The secret of success is the administration of the largest dose possible, at the earliest moment possible after the onset of the disease.

REFERENCES

1. Three of these cases were reported by P. A. Surgeon Lawrence M. Schmidt, U. S. N., in the U. S. Naval Medical Bulletin, for July, 1913, page 471.
2. Medical Record, Dec. 2, 1911. "The Treatment of Tuberculosis and Other Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercury."
3. Two cases reported by P. A. Surg. Schmidt, one complicated by lobar pneumonia, and both by acute endocarditis; one case by P. A. Surg. T. W. Reed, U. S. N., and one case by P. A. Surg. Wm. Chambers.
4. Eleven cases reported by P. A. Surg. William Chambers, U. S. N., and one by P. A. Surg. Reed.
5. Medical Record, Feb. 22, 1913. "The Treatment of Diseases of Vegetable Parasite Origin by Deep Injections of Mercury."
6. Berliner klin. Woch., Oct. 20, 1913. "The Immunization of the Blood against Septic Disease."
7. Il Policlinico, Sesione Practico, Oct. 5, 1913, page 1448. "The Treatment of Rheumatism by Baccelli's Method."

ICHTHYOL IN ACNE ROSACEA.—S. Gross writes that acne rosacea is frequently associated with affections of the nasal mucous membrane, and that after these have received suitable treatment the redness of the nose disappears. He therefore draws attention to the value of ichthyol, which is also useful in the transient redness of the nose (erythema fugax nasi) occurring in young girls as an angio-erethistic manifestation. The author employs the following mixture:

Ferri Lactatis.....10 Gm.
Ichthyolis.....10 Gm.
Extr. et Rad. Glycyrrh.....q. s. ut ft. pil. No. C.

THE SPECIFIC CAUSE AND THE PROMPT SPECIFIC CURE OF PYORRHEA ALVEOLARIS OR RIGG'S DISEASE*

By C. C. Bass, M.D., and F. M. Johns, M. D.
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In August of this year we found amebæ in a stained preparation of pus from a case of pyorrhea alveolaris. Struck with the possible importance of the observation, we at once secured and examined specimens from six other cases of the disease in patients in the wards of the Charity Hospital. Apparently the same species of ameba was found in each of the seven case. Their close resemblance to the entameba of amebic dysentery and the marked specific favorable influence of treatment with ipecac and emetine in amebic dysentery led us to expect that the same effect might be exerted on this form of amebic disease also. Up to this time we were not informed on the literature of the protozoa of the mouth and had never read or heard any suggestion that amebæ were pathogenic in the mouth. We were, however, familiar with the fact that ipecac, and, more recently, the active principle of ipecac, emetine, acts specifically against amebic infection of the intestine. We began treating cases as we would amebic dysentery, with emetine, and have since made considerable search into the literature, to learn that pyorrhea alveolaris was written about more than three hundred years ago, probably the same ameba that we had observed had been described by Grassi in 1849, and many others since, and that emetine, one of the active principles of ipecac, a remedy used for (amebic) dysentery more than sixty years ago, had been applied locally in cases of Rigg's disease, with favorable results, by Barrett[1] in collaboration with Allen J. Smith, in June of this year. So far as we know, ours is the first treatment of the disease by emetine given hypodermatically.

Amebæ in the mouth have been observed and described by many writers since 1849, when Grassi named one species *Ameba gingivalis*. Sternberg[2], in 1862, described *Entameba buccalis*. This name is retained by Prowazek[3] in 1904.

An ameba (*Ameba kartulis*) was described by Kartulis[4] as pathogenic, and found in suppurating tumors in the mouth in Egypt.

Smith and Barrett[1] announced their belief that "*Endamœba*" *buccalis* is pathogenic and present in all cases of Rigg's disease, at the June 30 to July 2 (1914), meeting of the Pennsylvania State Dental Society, and stated that they had obtained favorable results by local application of emetine hydrochloride. Their paper was published in the August number of the "Dental Cosmos."

The presence of *Endameba buccalis* in diseased gums was recently published also by Dr. Angelo Chiavaro[5], of Rome, Italy, in a paper read before the American Dental Society of Europe at Paris, July 30 to August 1, 1914. He found it in every one of twenty-two cases of pyorrhea and fourteen other cases, not pyorrhea, out of a total of sixty-eight examinations. He concluded that "the endameba has no pathogenic action; on the contrary, as it feeds on bacteria, it is most probably an adjuvant in the auto-disinfection of the mouth. It is found in the pus of all cases of pyorrhea alveolaris."

We have examined material from the lesions in eighty-seven cases of pyorrhea, and have found amebæ in eighty-five of them. One of the negative cases was a single slide prepared a distance from the laboratory, from the gum of a patient who was convalescing from plague. Pus could be squeezed from her gums, and the diagnosis of pyorrhea alveolaris seemed indicated. It may be possible that other preparations from other teeth would have shown amebæ. The other negative case was that of a 13-year-old child with acute gingivitis, involving all the gums, of about eight days' duration. Thorough search failed to show amebæ, and we now believe this probably was not a case of pyorrhea alveolaris or Rigg's disease.

In addition to the eighty-six cases in which the disease was either diagnosed by dentists or was so advanced that no mistake could be made, we have made more than a hundred examinations of preparations made from apparently normal gums and teeth, either in the mouths of patients who had the disease involving other teeth, or in people who appeared to have normal gum margins. We have not been able to find amebæ in a single such instance. We have, however, found them on several occasions in instances where the gum margin appeared inflamed and diseased, but the best that we could determine the disease did not extend to the alveolar margin. Such cases, perhaps, could not be called pyorrhea alveolaris, but they are probably the beginning of the disease. In several instances we have found amebæ in similarly mildly inflamed and "easy to bleed" gum margins of one or more teeth in patients who had well-advanced Rigg's disease around other teeth. We have found amebæ around teeth in what we have con-

* Read before the Orleans Parish Medical Society, New Orleans Med. & Surg. Jour., Nov., 1914.

sidered to be all the different stages of the disease in the same case, from the slight redness at the gum margin and tendency to bleed easily to the tooth hanging loose in its socket or standing, entirely stripped of gum, on the exposed carious bone.

The technic of examining for the amebæ is very simple. Remember that they are most numerous in the bottom of the lesion. A little material is removed with a suitable instrument (a good toothpick serves the purpose well), diluted on a slide with a little salt solution, saliva (patient's) or water. A cover-glass is placed on the diluted material, which should be examined promptly with the high dry lens of the ordinary microscope. By careful search amebæ are found, showing the characteristic ameboid motion. We are not prepared at this time to say whether there is more than one species to be found. The amebæ we have seen vary in size from about that of a leucocyte to about three or four times this size. No contractile vacuole is recognized, but nutritive particles, more refractile and more prominent in appearance, are observed. The ectosarc is quite clear and is well differentiated from the endosarc.

These amebæ are easily demonstrated in stained specimens. A good method is to make a thin spread of the scrapings and pus from the bottom of the lesion on a slide, allow to air dry, fix with heat and stain with carbol-fuchsin about one-fourth minute, wash, stain with Lœffler's methylene blue about one-half minute, wash, dry, and examine. The amebæ are well stained by this method, and show their inclusions of tissue or cell remains, indicating pathogenicity. We have been unable to demonstrate that these amebæ take up bacteria, though they sometimes appear to do so.

Ipecac has been employed with success in the treatment of amebic dysentery for many years, but on account of its nauseating effect and sometimes impossibility for patients to retain it in sufficiently large doses, there has been more or less dissatisfaction in its use. Vedder[6] found that fluid extract of ipecac was destructive to cultural amebæ in solutions of 1 to 200,000. Rogers[7] experimented with the active principle of ipecac, emetine, and found that it would kill entamebæ in stools in solutions of 1 to 100,000, and began using it hypodermically in 1912 in the treatment of amebic dysentery. It is now very generally employed in this manner for this purpose, and with fairly uniform results. The action of emetine in amebic dysentery is very prompt, striking and specific. Usually the entameba cannot be found in the discharges after twenty-four to forty-eight hours of treatment, and the bloody mucous stools give place to normal formed stools in three or four days. There is considerable tendency to relapse after the treatment has been discontinued for a time, but no doubt a considerable number of "relapses" are, in fact, reinfections.

We have not tried the injection of solutions of emetine into the gum and pus pockets, as Barrett and Smith[1] did, because it has not seemed to us reasonably probable that all the diseased tissues could be reached in this way. Whenever a patient has advanced Rigg's disease in one or more teeth the disease also exists around and between many of the other teeth. The interdental tissue is often soft, spongy, and bleeds readily. Often simply sucking the teeth causes bleeding. Careful examination reveals active motile amebæ present.

The results of our experiments, so far, are most gratifying. We have had sixty-eight cases under observation and treatment from two days to two weeks. The doses of emetine experimented with have been from one-half to one grain. Only one dose was given in a day. Several cases have been given a dose daily for several days. Others were given one or more doses until the amebæ disappeared, after which an interval was allowed to determine how long it would be before they would return, or what other results could be observed. In several instances no amebæ could be found the next day after the first dose was given. In a few, however, they were found the next day after emetine had been given on two successive days. In no case have we been able to find amebæ the next day after emetine had been given on three successive days.

As to the duration of the absence of demonstrable amebæ following the three (or less) doses of emetine, our studies have not been conducted long enough to determine. In one instance we found amebæ on the fourth day after the last emetine had been given. In another instance we found them on the sixth day. In several instances none could be found after seven days or longer intermission of treatment. On account of the wide distribution of this ameba in nature and the character of the lesions of the disease, we do not think it very likely that bad cases of pyorrhea alveolaris will be permanently disinfected by a few doses of emetine given during a few days. The chances of reinfection are so great and the damaged gum, alveolar and tooth structure offer such favorable soil that it must surely be necessary to continue the specific treatment until Nature has had time to fully heal the disease.

The length of time necessary for this will no doubt depend upon many factors. Healing and repair of diseased bone is always slow. Whenever the disease involves only the gum, and has not reached the bone (alveolar structure), it is our impression, from observations so far made, that probably the length of time necessary for the gum to heal will not exceed a week. We have observed great change in forty-eight hours, and gums that bleed easily often become perfectly normal in this regard in from twenty-four to seventy-two hours. The results are so striking that there is no doubt in the mind of the doctor or the patient.

Our experiments have not advanced sufficiently to enable us to lay down dogmatic rules as to the treatment, but we are certain that rapid and favorable results may be expected to follow the administration of one-half grain of emetine hydrochloride hypodermatically (in any part of the body) daily for three or four days. In all except the early, mild cases it may be necessary to repeat the treatment, during one or more days, after an interval of three to ten days. In the worst cases no doubt it will be found necessary to repeat the treatment several times before the disease is entirely well. No doubt removal of tartar, scales and other local dental treatment should also be done at the same time. It is quite likely that the injection of a weak solution of emetine, one-half per cent., as used by Barrett[1], into such lesions as can be reached by it will be found to favor success from the hypodermic treatment with emetine.

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[4] Zeitschr. f. Hygiene, Vol. XIII, p. 9, etc.
[5] Reported in the Dental Cosmos, Vol. LVI, No. 9, p. 1089, etc.
[6] Bull. Manila Med. Soc., March, 1911.
[7] British Med. Jour., June 22 and August 24, 1612; Therapeutic Gazette, 1912, Vol. XXXV, 837.

Pollutions:

The following prescriptions have been recommended by W. J. Robinson:

Tinct. Ferri Chloridi.....f. ℥vj
Tinct. Cantharidis.....f. ℥ij

M. Sig.: Two to seven drops in a little water (preferably Vichy or Seltzer) t. i. d.

Strontii Bromidi.....
Sodii Bromidi.....āā ℥iv
Elix. Digestivi Comp.....f. ℥jss
Aquæ.....ad f. ℥iv

M. Sig.: One teaspoonful at 4 p. m., at 8 p. m., and on going to bed.....

EARLY DIAGNOSIS OF APEX TUBERCULOSIS

It is a well known fact that differences in the size of the pupils are often found in early apex tuberculosis. According to R. Ehrmann, the test can be rendered more delicate by first giving the patient 5 to 15 drops of a 0.1 per cent. solution of atropine sulphate by mouth and then testing the size of the pupils every fifteen minutes. Still better results are obtained if a drop of a 3 per cent. cocaine solution or also a drop of a 1:1000 solution of adrenalin be instilled into the conjunctiva. The test shows that in tuberculosis there is an increased irritability of the dilator muscle of the pupils.—Berl. klin. Woch., Aug. 31, 1914.

EPINEPHRIN ABSORPTION

Experiments on the absorption of epinephrin from the nasal mucosa are reported by J. D. Pilcher, of Cleveland. The epinephrin was injected into the submucosa of the nasal septum and anterior turbinals of fifteen dogs under anesthesia and the blood-pressure recorded from the carotid. The usual dose of the drug was 1/20 Cc. of the 1:1,000 solution per kilogram of the animal, sometimes a little more or less.

Following about one-half of the injections made (twenty-one out of about forty) there was a striking rise of blood-pressure. The experiments show that the submucosa of the nasal passages is an excellent absorbing surface, at least for epinephrin and probably for other drugs. The effects often approach and even parallel those produced by rapid intravenous injection. This is evidently due to the great vascularity of the region, and an experiment showing that the material passes directly into the circulation is reported.

The author states that clinically this method of applying epinephrin might have serious effects in persons in whom a sudden rise in blood-pressure is especially contraindicated, those with cardiovascular disease, arteriosclerosis, etc. Effects of cocaine would likely be exaggerated. In conditions of circulatory collapse necessitating rapid stimulation, it would seem that it might have much value. The technic is simple and the quantity of the drug is easily controlled. The method, of course, is not as satisfactory as the intravenous method when the latter is feasible, which is not often the case, however, in sudden failure of the heart, and it would require considerable caution in view of the possible serious effects on blood-pressure.—Jour. A. M. A., July 18, 1914.

Progress in Materia Medica and Therapeutics

COPPER-LECITHIN IN TUBERCULOSIS

It has been proven that the tubercle bacillus possesses a strong affinity for copper and is killed by very dilute solutions of its salts. The efficiency can be increased by combining the copper with lecithin, which is able to destroy the waxy capsule of the bacillus. E. A. Oppenheim reports a number of cases of surgical tuberculosis in children where excellent results were obtained from general inunctions with copper-lecithin and local applications of copper. Intramuscular injections were not suitable as they are too painful. In lupus, scrophuloderma and other tubercular skin affections, the cosmetic results obtained were excellent. In bone tuberculosis, the curative effect was more pronounced than that obtained with bismuth paste, silver nitrate, pyrogallol and Röntgen rays. Wherever possible, the copper should come into direct contact with the tuberculous tissue. The copper salts employed were the cinnamate and chloride, the former as a 3 per cent. and the latter as a 4 per cent. salve, and dimethylacetate of copper in 5 per cent. solution, in each case in combination with lecithin.—Berl. klin. Woch., June 15, 1914.

SEROSALVARSAN TREATMENT OF PARESIS

L. B. Pilsbury, of Lincoln, Neb., has treated thirteen patients with paresis with salvarsanized serum, two of whom received only two injections and are not reported on in his tables. One is not improved and the other is dead. In all sixty-two intraspinal treatments have been given. "Only salvarsan has been used and wherever an intravenous salvarsan injection is shown in the tables the intraspinal injection was given on the following day. A few intravenous injections are indicated which are not followed by the usual intraspinal treatments. As soon as the blood was withdrawn the fibrin was whipped out and the blood diluted with an equal amount of physiologic salt solution, so as to make a 50 per cent. serum. This was left in the ice-box over night, the serum removed the following day and heated at 56° C. for from one-half to one hour, the period varying somewhat. The injection was made with an ordinary glass cylinder, a small rubber bulb being attached to the lowest arm of a glass T, so as to make slight pressure when needed. The usual interval before withdrawal of blood was one hour, but this was sometimes shortened to one-half or three-quarters of an hour. McCaskey now recommends an interval of only twenty minutes as he thinks the spirocheticidal power of the blood is then at its height. After some vacillation I decided on 30 Cc. of 50 per cent. serum as a standard dose, an approximately equal amount of spinal fluid being withdrawn. The usual interval between treatments was two weeks." Six of the eleven patients mentioned in the tables show improvement in some respect, not necessarily clinical. One is no better and four are dead; all cases were well advanced. In most cases the tendency has been toward a reduction in the amount of globulin, albumin, number of cells and in the spinal fluid Wassermann. —Jour. A. M. A., Oct. 10, 1914.

TREATMENT OF GONORRHEAL CONJUNCTIVITIS

Ethylhydrocupreine is a quinine derivative possessing a specific, bactericidal action toward pneumococci. F. Puscarin has employed a 2 per cent. solution as instillation in gonorrheal eye diseases and has found that it possesses as strong a curative effect as in corneal ulcers of pneumococcus origin. If the treatment is begun early, a cure may be expected on the fourth day while in advanced cases, 10 to 15 days may be required. Cases already on the road to recovery will no longer show gonococci in the discharge after a treatment lasting only three days.—Soc. de Biolog., May 16, 1914.

TREATMENT FOR HOOKWORM DISEASE

The treatment is to give little or no supper, and at bedtime a dose of magnesium sulphate. In the morning, as soon as the bowels have moved freely, one-half the dose of thymol, in capsules, is given, and in two hours the remainder of the thymol. Two hours later another dose of magnesium sulphate is administered. After movements of the bowels from this dose food may be taken, but only coffee or tea, without milk, should be allowed during the period of the treatment, namely, until the thymol has supposedly all passed out of the body. Absorption of thymol is not desired, as it may cause unpleasant symptoms.

Alcohol and oils should not be given either before, during, or even soon after the treatment. For one hour after taking the thymol the patient should lie on his right side to hasten the passage of the drug and liquid through the pylorus into the intestines.

The dose of thymol depends on the age, but is large. Ferrell suggests 60 grains for an adult dose (that is, from twenty years of age upward). Doses for children and youth may be readily estimated by the following formula, namely: At fifteen years, three-quarters of the age, three-quarters of the adult dose; at ten years, one-half the age, one-half the dose; at five years, one-quarter the age, one-quarter the dose; at two and one-half years, one-eighth of the age, one-eighth of the dose. If the patient is much underweight for his age, the dose should be reduced accordingly. The thymol should be powdered and placed dry in capsules. One-half the dose decided on is given at 6 a. m. If the bowels have been well moved from the dose of magnesium sulphate of the night before, the other half of the dose of thymol should be given at 8 a. m., both doses being taken with plenty of water. Ferrell adds sugar of milk in equal parts to the thymol, and says he thinks the drug acts better.

In one or two weeks the treatment should be repeated, unless the microscope shows the feces to be free from the parasite and its eggs. Sometimes a third and even a fourth treatment may be needed. The action of the thymol may be hastened by (at the moment of swallowing) uncapping the capsules.

Thymol when absorbed acts like phenol, but it is slowly dissolved by the gastro-intestinal fluids and hence, is absorbed slowly. Any oil or fatty substance hastens its absorption. Convulsions are probably not often caused by thymol poisoning, but great weakness and finally collapse are the gross subjective symptoms. Objective symptoms of its undesired absorption are albumin and even blood in the urine. Fatty degeneration of the liver and congestion of the kidneys and lungs are pathologic findings.

To forestall any possible great absorption of thymol after large doses are administered in hookworm disease, a brisk cathartic should be given and repeated, if free catharsis does not occur within a few hours after taking the thymol. Castor oil, or any other oil, should of course *not* be the cathartic used. If symptoms of poisoning occur, stomach-washing, colon-washing, and sodium sulphate or potassium and sodium tartrate should be the means used to promote elimination. Strong black coffee should be given, and hypodermic injections of atropine, strychnine, and pituitary extract should be administered and the patient should be surrounded by dry heat. Later, any kidney congestion should be treated as an acute nephritis.

Except as a specific for hookworm, thymol should probably never be used internally. As a bowel antiseptic it is too dangerous a drug to be used repeatedly, unless the dose is too small to be of any value.

Ferrell's dosage for adults for hookworm disease is as follows:

Thymolis.....gr. lx
Fac capsulas siccas x.
Sig.: Take 5 capsules, with plenty of water, in the early morning, as soon as the bowels have moved. Take the other 5 capsules in two hours. Two hours later take ½ ounce of Epsom salt, which should be repeated if it does not act in four hours.

—Jour. A. M. A., Oct. 17, 1914.

DISINFECTION OF HANDS

A sufficient disinfection of the hands can only be obtained with alcohol of at least 70 per cent. by weight. It is necessary, however, first to wash thoroughly with soap. A simpler and cheaper method, according to Huntemüller and B. Eckard is the use of small amounts of palmitin and stearin soap with 80 per cent. alcohol or tincture of green soap or better still a 75 per cent. tincture of castor oil. Still better results are obtained if somewhat larger amounts are rubbed into the hands with a cotton sponge.—Berl. klin. Woch., Aug. 10, 1914.

A NEW REACTION OF CEREBRO-SPINAL FLUID

The following new reaction is described by P. Boveri: 1 Cc. of a 1:10,000 solution of potassium permanganate is floated upon 1 Cc. of the cerebro-spinal fluid to be examined. In normal cases, no change in color will be noted, but with pathological fluids, the line of junction will become more or less yellow. This change in color will also be noticed if the test-tube is shaken. A strong reaction will take place in 2 minutes, a medium one in 3 to 4 minutes and a feeble one in 5 to 6 minutes. It seems to be more delicate than the Nonne or Noguchi test, and is most pronounced with inflammation of the spinal cord. There is, however, no distinct parallelism between the reaction and the albumin or globulin contents of the fluid, nor any distinct relation to the lymphocytosis. The pathogenesis of the reaction is not known.—Muench. med. Woch., June 2, 1914.

EARLY SYMPTOMS OF TUBERCULOSIS

Among the earliest signs of pulmonary tuberculosis are anemia and loss of appetite. The latter may be due to absorption of toxins or to the effect of swollen lymph-nodes on the vagus. There is also frequently a tendency to diarrhea and a hyperacidity of the stomach. Many patients complain of palpitation of the heart and there often is a slight hypertrophy of the right ventricle, to be followed later by hypoplasia. Tachycardia may be present (pulse 100 to 120 per minute) and often the patients speak of vague pains in the chest and even in the abdomen.

A common objective symptom is paresis of one vocal chord, corresponding to the side of the lesion and which may be accompanied by lateral granular pharyngitis, hypertrophy of the corresponding tonsil, affections in the cavum pharyngonasale, purulent otitis media and paresis of the soft palate. The laryngeal paresis is generally accompanied by a slight cararrh. The musculature of the affected side is also more poorly developed and the pupil may here be larger and react more sluggishly to light. All these symptoms are due to involvement of the vagus, sympathetic and recurrent nerves.—Berl. klin. Woch., July 27, 1914.

PHARMACOLOGY OF SODIUM TARTRATE

W. Salant, of Washington, D. C., has investigated the toxicity of sodium tartrate which, he says, until the last few years has received only casual attention. He notices the work of Underhill and others and gives a summary of their observations. His own observations have shown that doses of 0.4 to 0.8 Gm. per kilo of the neutral salt may produce renal disturbance and even death in rabbits which have been receiving a diet of oats for several days before and during the experiment. The injection of 1.0 to 1.2 Gm. of sodium tartrate per kilo was invariably followed by severe kidney disorder and marked degeneration of the epithelium of the convoluted tubules was found. Forced movements, ataxia, paralysis and convulsions developed in such animals several days after receiving the tartrate. Diet seemed to modify the effects of the drug. Cabbage-fed rabits seemed more resistant and rabbits on a diet of carrots were extremely resistant; except for an occsaional trace of albumin no abnormality was observed. Salant is inclined to credit this to the large amount of sugar in the carrots and the consequent accumulation of glycogen in the tissues. The effects of the drug orally administered are considerably less marked than when it is injected subcutaneously. The toxicity when given intravenously varied with the rate of injection. Acute symptoms appeared after from 1.5 to 2.2 Gm. per kilo of an isotonic solution was introduced. Diarrhea never occurred after an intravenous injection. Experiments with sodium tartrate on the circulation showed it to be a cardiac depressant. Under ether and chloroform anesthesia the injection of sodium tartrate considerably decreased the force of the heart and its frequency slightly or not at all. Recovery was the rule. Blood-pressure was increased under ether but no effect of tartrate on blood-pressure was observed, with chloretone as an anesthetic. Salant has studied the isolated heart of the dog, cat and frog and found sodium tartrate in very dilute concentration depressing to the heart. He does not attempt to explain the method of action of the drug; though his experiments show the decided effect of calcium under certain conditions, it utterly fails to account for the action of sodium tartrate in some cases.—Jour. A. M. A., Sept. 26, 1914.

TREATMENT OF BRONCHIECTATIC CAVITIES

The treatment of bronchiectatic cavities has made wonderful progress, where surgical interference is possible, that is, when the cavity is single and not too large.

The methods available are insufflation of nitrogen and extrapleural thoracoplasty. Patients that are not operated will experience some relief by getting rid of the accumulated secretion in the morning by proper position and will often then rest comfortably for the greater part of the day. G. Singer finds that many of these patients will improve rapidly if the intake of fluids is reduced. Thus at first, the patient receives only 600 Cc. of liquids daily, later, this amount is reduced to 200 Cc. It is surprising how soon the patients become accustomed to this treatment, especially if they are occasionally allowed to drink freely for one day.

The amount of sputum is reduced at once and its character changes, while in mild cases there may be a complete cure. Further improvement is seen in the cessation of cough and the disappearance of infiltrations as shown on the Röntgen plates. The diet should be such that the patients do not lose weight; it is contraindicated where there is tuberculosis or nephritis. Every case should also be carefully examined for empyema of the maxillary sinus, for if this is present, no improvement will result unless this is treated.

In rare cases, syphilis is at the bottom

of the condition, hence a sero-reaction should be performed. In some few cases, it is impossible to check the secretion entirely; here, hot air or electric baths, atropine, calcium chloride or inhalations of oxygen may be tried. Sometimes spraying the larynx with adrenaline gives excellent results. Finally, the intravenous injection of hypertonic salt solution (3 to 4 Cc. of a 10 to 15 per cent. solution) is advised. The same treatment may be used in asthma.—Therap. Monatshefte, May, 1914.

SOME LITTLE-KNOWN EFFECTS OF RÖNTGEN RAYS

H. Eckstein draws attention to the very pronounced pain-relieving properties of the Röntgen rays, even in minor affections such as contusions of the hip and sprains of the ankle. Remarkable and immediate results have also been seen in severe contusions of the vertebral column and in painful, impacted fractures. The X-rays are also very useful in rheumatic and gouty affections, herpes zoster, neuralgia, neuritis and in pains of unknown origin where electric baths would be indicated. In painful, inflammatory affections, the results are also good, but not so lasting. Further indications are bronchitis and bronchial asthma and where it is desirable to reduce reflex action as in vomiting and difficult laryngoscopic examinations. Further experience will be necessary and it is possible that this form of treatment may be successful in gastric and intestinal affections of spastic character or with increased peristalsis, in gastric crises, angina pectoris and for the pains after operations. —Berl. klin. Woch., Sept. 7, 1914.

TREATMENT OF FUNCTIONAL ILEUS

According to R. J. Behan, of New York, the essentials of treatment of all forms of ileus are to relieve the distension and to fill up the depleted vessels. The first, in case of gastromesenteric ileus, is accomplished by complete, thorough and frequently repeated washing of the stomach. Thorough stomach washing is to be recommended in any form of ileus. In washing the stomach it is well to elevate the hips of the patient and to withdraw the tube very slowly so that all the fluid may be removed. Withdraw all food and drink. Give large and copious injections of salt solution, bag 1½ ft. above the rectum, pelvis elevated. If after twelve hours no bile is seen in the fluid expelled, operation should be undertaken. Continuous Murphy is also of value. Saline should also be given subcutaneously and, if the patient is very sick, intravenously. In some cases, particularly in gastromesenteric ileus, in which the stomach is dilated, the prone position, with the patient slightly turned to the right with his hips elevated, will relieve the distension and facilitate the emptying of the stomach. In some instances the high frequency current over the abdomen is supposed to have done good. Heat should also be applied to the abdomen.

Cathartics are absolutely contraindicated. They are injurious "by stimulating in vain the peristalsis of, and increasing the amount of fluid in, the proximal portion of the bowel; they favor intestinal putrefaction with absorption of toxic products; cause a reverse flow of foul, offensive fluid into the stomach with the production of exhausting vomiting; so damage the bowel immediately cephalad of the obstruction as to favor the migration of microbes into and through its walls; increase an intussusception; hasten the cutting through of a constricting band or ring; aid in the extension of paralysis, and facilitate the dissemination of infection."

One of the best drugs is morphine. It decreases the vagus irritation, dampens irritating reflexes, and stimulates the sympathetic. This would be most useful in spastic ileus, but harmful in the paralytic form. In that form of ileus due to vagus involvement, it is indicated; also in local irritative ileus due to reflexes from irritative foci in the abdomen, as in peritonitis, etc. Atropine is also useful in spastic ileus. In small doses it paralyzes the vagus and stimulates Auerbach's plexi of spinal nerves. Eserine is of value in paralytic ileus. It acts on the vagus and causes contraction of the distended bowel, at least it increases the tone of the intestinal muscles. Pilocarpine may also be used for the same purpose. Strychnine stimulates the spinal nerve endings in Auerbach's plexus, and should be given in large doses— ¼ to ½ grn. In the latter dose it frequently causes poisonous symptoms. Adrenalin is useful in paralytic ileus.

If the obstruction is not relieved inside of twenty-four hours, especially if it seems to be getting worse, operation should be undertaken.

All mechanical obstructing factors should be removed. If the ileus is of the spasmodic or paralytic type, but little can be done for it, except possibly a gastrojejunostomy in gastromesenteric ileus, or an entero-enterostomy, or colotomy. These are of doubtful value, for when the ileus is corrected in one place it frequently recurs in another. In fact, the operative inter-

ference seems to be a stimulating factor for its further recurrence, so that it seems that medical measures are more successful in coping with spastic or paralytic ileus than are surgical ones. However, one must not forget that an exploratory operation has saved many a patient's life.—Interstate Med. Jour., Sept., 1914.

ACTION OF MESCALINE SULPHATE

According to Heffter, the alkaloid, mescaline, possesses the property of causing intoxication accompanied by brilliant color visions. But the author at the same time points out that the alkaloid occasions such unpleasant by-effects that the enjoyment of the beautiful visions is much diminished, and there need be no apprehension that the alkaloid will be introduced among civilized nations as a means of intoxication. Bresler later carried out experiments on mentally affected patients, in order to make a more detailed study of the therapeutic value of mescaline. He came to the conclusion that no other pharmacological drug, without giving rise to disturbances of consciousness and marked by-effects, exerted such a powerfully excitant action on a circumscribed area of the cerebral cortex as did mescaline. His observations of the definite excitation of the senses led him to the assumption that this reaction affected the excitability of the optical cortex cerebri, which is distinct from the retinal impressions. The results of the investigations of the above named authors did not lead to practical conclusions for psychiatry. For this reason a new work by A. Waeber is not without interest. In order to investigate in greater detail the curious intoxicating effect produced by mescaline, he administered subcutaneous injections of 3 grains of mescaline sulphate to several persons and followed up the subjective and objective effects. Among six persons he did not once meet with the visions described by Heffter and Bresler. Only one person was affected by drowsiness and during sleep saw a colored picture and heard strange music. According to Waeber, individual importance can only be attached to this fantastic dream inasmuch as the particular person rarely dreams naturally. The facial symptoms, which occurred in all the individuals, were in all probability chiefly caused by peripheral irritation. This may be inferred from the observed contrast colors, the dilated pupils, twitching of the eyes, etc. In three experiments there were well marked hypnagogic conditions, during which imaginary movements and faces were seen. Usually the mood became cheerful, there was a tendency to laugh and motor restlessness, the patient was easily diverted, the memory and the ability to calculate were reduced, there was a tendency to unite words by their sound and a more or less rapid cessation of the representations. Among the physical symptoms were sensations of smell, a feeling of weight in the head, slackness, lassitude, a feeling of heat in the joints, vomiting, a feeling of protrusion of the eye-balls, vasomotor appearances, outbreaks of perspiration and increased lacrymation. The double personality observed by Dixon was not definitely present. These results did not confirm Bresler's findings. Nor has the hope been fulfilled that by means of researches on mescaline, the sensation of double personality, said to be brought about by mescaline and which is often described by mentally affected patients, might be explained.—E. Merck's Ann. Report, Vol. xxvi.

SALVARSANIZED SERUM TREATMENT

The results of 100 injections of salvarsanized serum in twenty-four cases of nervous syphilis are discussed by C. E. Riggs and E. H. Hammes, of St. Paul. Four of the cases are reported. Our former methods of treatment have been ineffective in the so-called parasyphilitic diseases. There is no question as to the advisability of the intraspinal injection of spirocheticidal solutions into the spinal and cranial subarachnoid space but only of the drug to be injected and the relative merits of the *in vitro* and *in vivo* methods. As to the former, the authors do not consider the greater spirocheticidal activity compensates for the greater danger in its use. There has been only one case reported so far of fatal results following the Swift and Ellis method, and as Swift has said in a personal letter to Dr. Hammes, can only be accounted for by faulty technic. In only one of the authors' cases did they have any trouble with the Swift and Ellis method. Marked benefit followed in the tabes cases but the results in paresis were not so satisfactory, probably on account of the advanced stage of the disease. Some improvement, however, was noted though a greater number of injections were required. Even a temporary amelioration of a disease as hopeless as paresis is something of a success. Certain cases of tabes and paresis prove most refractory and here the salvarsanized serum injections should be employed, favorable results being sometimes obtained after other methods fail. The reaction following salvarsanized serum is

usually slight. The temperature seldom goes above 100° F. and generally is about 99° and the rise lasts from twenty-four to forty-eight hours. Severe headache, vertigo and vomiting rarely occur. In tabes there is usually a marked increase in the lightning pains for one or two days, but after that they appear to be greatly benefited. In only one case did the authors have any anxiety; it was a case of acute luetic meningomyelitis developing on a tabetic base. It was evidently an aseptic chemical meningitis follwing an injection of a serum. The authors' conclusions are as follows: "1. Clinical improvement and serobiologic reduction usually go hand in hand. 2. The report of cases without associated laboratory reactions is unscientific and valueless. 3. The intraspinal use of salvarsanized serum, as conceived and elaborated by Swift and Ellis, is a notable advance in the therapy of syphilitic affections of the central nervous system; it furnishes the one avenue of approach for spirillicidal drugs to the otherwise inaccessible spirochetes. 4. It is a safe procedure in the hands of trained and properly equipped men. Whether it will bear the final test of efficiency, namely, cause pleocytosis, globulin excess and a positive Wassermann in the blood-serum and spinal fluid permanently to disappear, is yet to be demonstrated."—Jour. A. M. A., Oct. 10, 1914.

TREATMENT OF LEUKOPLAKIA

Barker urges that every patch of this affection should be watched closely, especially if it does not improve under treatment. On the slightest sign of activity in it, free excision should not be deferred. The first sign of cancerous change in such a patch is usually seen in the more advanced degrees. It generally begins as a crack in the white covering or at its ragged border. This fissure exudes blood or serum, and causes pain on movement of the part. It may break under washes, but in any case must be under suspicion whether it does or not. There is usually a feeling of stiffness in the area affected. It has lost its softness and pliancy. In this state it may remain an indefinite time, but sooner or later the neighborhood of the fissure will become indurated; then the crack deepens and widens, and the pain and discomfort increase. On finding this induration around a crack in an old leukoplakia there should be no hesitation in resorting to free local excision. The state of the glands is no criterion. It is a fact based on long experience, that carcinoma starting in leukoplakia has little tendency to spread along the lymphatics; that it is one of those forms of cancer which remain for a considerable time purely a local disease. On the whole it appears to Barker that the very pessimistic views held in some quarters, as to the inevitable transition of leukoplakia into carcinoma, have perhaps been overdone. It is a condition to be watched carefully, and one which justly excites uneasiness; but it is another thing to take it for granted that it is always the precursor of cancer, and to attack it at once by wide-reaching excision of the part itself and of the glands likely to be involved.—Practitioner, Aug., 1914.

COLON BACILLUS INFECTIONS OF THE KIDNEY

H. D. Furniss, of New York, writes that in the acute hematogenous form of colon bacillus infection of the kidney the patient is put to bed, induced to drink large quantities of water, given 15 grains of hexamethylenamine every six hours, and if the urine is not acid, in addition 20 grains of acid sodium phosphate three times daily —but not at the same time as the hexamethylenamine. The author also considers salol to be a remedy of great value which in some irritation cases works better than hexamethylenamine. The lumbar region is dry cupped once or twice daily, and an electric pad applied continuously. Temperature above 102° is controlled by alcohol and water sponging. After the subsidence of the acute symptoms autogenous vaccines are of benefit in not only accelerating recovery in the present infection, but in so increasing the patient's resistance that recurrence will be prevented.

Attempt is also made to give proper support to the kidney by bandaging and corseting. If the treatment as outlined does not suffice, the pelvis of the kidney is irrigated with ½ to 1 per cent. silver nitrate every five to seven days. At the same time search is made for the primary infecting source, and it is eradicated. If there is a stone in the kidney or ureter, or cause for insufficient drainage, it should be removed. Some of the marked prolapses showing faulty drainage and dilatation require nephropexy.

The combined functional capacity of the two kidneys should be determined, then the relative. For the combined function, the author prefers the phenolsulphonephthalein test. If the total elimination is good we can infer that at least one kidney is sufficient; if bad, that neither is. To determine the relative capacity the author gives 10 Cc. of a $\frac{3}{10}$ of a 1 per cent. solution of indigo carmine intravenously, and then observes the elimination from the two

ureters through an observation cystoscope. For the ulcerative and pus kidneys nephrectomy is best, and drainage if this is impossible. In many cases of arthritis the focus of infection is to be found in colon bacillus infection of the kidneys, and treatment of the renal infection will materially benefit the joint condition. As to vaccines the author states that best results have been obtained in the cases where there was an involvement of the renal parenchyma, both as regards the existing infection and the prevention of relapses.—Post-Graduate, Sept., 1914.

TREATMENT OF SPOROTRICHOSIS

B. F. Davis, of Chicago, reports a case of sporotrichosis in a patient seventy-seven years of age. She complained of several ulcers on the right forearm, of swellings on the right forearm and hand, and of morning vertigo and nausea. About six months ago the skin of the palm of the right hand was pierced by a "cactus needle." Two or three weeks later a lump formed at the point of injury and became tender. This lesion has persisted and occasionally discharges small quantities of blood and serum. A month after injury the hand and forearm became swollen and painful and several linear streaks were observed on the back of the hand and forearm. This trouble disappeared in two or three days only to reappear at intervals for a month, when a small lump, red with a bluish edge, somewhat painful, was noticed on the dorsal surface of the forearm. The lump gradually increased in size, a "blister" formed, and "water" oozed out. Since then several more lumps similar to the first have developed. Some of these discharge a sero-sanguinous exudate, others have not yet broken down.

Excision of the largest lesions was made and the wounds closed without drainage. Healing was uneventful. The patient was placed upon large doses of potassium iodide and when last seen appeared to be making satisfactory progress.

The local use of iodine as the tincture or as Lugol's solution, and the administration of potassium iodide internally is the treatment usually recommended. These measures, especially the iodide by mouth, should be continued until the last vestige of the disease disappears.

In advanced or obstinate cases copper sulphate internally in $\frac{1}{8}$ grain to $\frac{1}{2}$ grain doses in capsules should be given a trial in conjunction with the iodides. Complete excision of certain of the lesions, in the absence of acute exacerbations with demonstrable lymphangitis, appears to be a commendable procedure. The value of vaccination with suspensions of killed spores, and of the X-rays as therapeutic measures, cannot at present be stated, but would seem to be sufficient to justify trial. —Surgery, Gynecology, and Obstetrics, Oct., 1914.

TREATMENT OF PERNICIOUS ANEMIA

The direct transfusion of blood has proven of little value in the treatment of pernicious anemia, though of great value in secondary anemia and hemophilia. The improvement is usually of such short duration that it is negligible. After the use of thorium X, H. Flörcken has obtained pronounced results with long remissions, but small doses only should be employed. The most recent treatment is splenectomy, but it is still impossible to say if the resulting improvement will be permanent. Not a single case has been reported cured but in 69 per cent. of the cases hitherto published, much benefit resulted from the operation. In every case, therefore, thorium X should first be tried, and, if necessary splenectomy later. It is impossible as yet to say which cases will react favorably. —Muench. Med. Woch., June 9, 1914.

DUODENAL FEEDING

The indications for duodenal feeding are obstinate, recurring cases of ulcer of the stomach or duodenum, particularly if severe pains are present. Before an operation is decided upon, the tube should be used for four weeks or more. A bleeding virtually never results if the tube is soft, yet the stools should frequently be examined for blood. Other indications are nervous anorexia and vomiting, also if the cause is pregnancy and there is marked loss in weight. In some cases of carcinoma of the stomach, where the pylorus is passable, this form of feeding may also be used with advantage. The food generally used is a mixture of $1\frac{1}{2}$ to 2 litres of milk with $\frac{1}{2}$ to $\frac{3}{4}$ litres cream to which may be added 8 eggs and 100 to 200 grams of sugar. Distress is present in only few cases in the form of slight colic, which can easily be controlled with opium, belladonna or hot applications. As a rule, constipation has to be corrected with mild laxatives. Special care is necessary to keep the mouth clean. Most drugs necessary may be added to the food.—Berl. klin. Woch., June 1, 1914.

"EUGENICS does not eliminate romance. We eugenists believe romance should be retained. Through the past it has proved a good thing."—Prof. Roswell H. Johnson, University of Pittsburgh.

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NOVEMBER, 1914

EDITOR'S NOTES

Treatment of Leukemia

The diagnosis of blood diseases has become perfected during the last years owing to the fact that the products of the diseased tissues can so readily be examined histologically. Thus, many subdivisions have become possible and the acute types of the disease have been recognized. It is also known that an aleukemic condition exists where the characteristic cells have not yet appeared in the blood and where puncture of the spleen is necessary to reach a diagnosis.

Satisfactory as our diagnostic methods thus are, unfortunately, little can be said about the etiology of this peculiar disease. It follows that our treatment can only be symptomatic and directed toward the pathological hyperplasia and hyperfunction. Much progress has been made in this field and though a cure has not yet been discovered, the remissions following a rational treatment are often of such duration that the life of the patient is considerably prolonged so that he may even resume his vocation for a limited period.

In former years, the use of arsenic alone gave promise of some result and at present there is a tendency to overlook this very valuable drug, in favor of more recent therapy. It possesses, however, pronounced tonic effects and a specific action upon the leukemic tumors. It is wrong to employ every means at our disposal from the very beginning, since often acute exacerbations will set in as a result of too energetic treatment, or else, it will be less easy to influence the disease in the remissions which are sure to come. It is for this reason that B. Hahn (Therap. Monatshft., Aug., 1914) start severy case, if it is in the early stages, with an arsenic cure. The form of arsenic employed is of little consequence, but especially good results have followed daily injections of sodium cacodylate.

The effect of the Röntgen rays is an American discovery. It has since then been proven by the animal experiment that besides an inhibition of the growth in the hyperplastic, leucopoetic tissues there is an actual destruction of the white cells in the circulating blood, for the uric acid in the urine is first markedly increased, later again becomes normal. To obtain a deep effect, hard tubes are preferred. Any possible soft rays are filtered out by means of aluminum. The dosage should be frequent and not too large, as a sudden, enormous reduction of white cells, hemorrhagic diathesis and necrotic angina leading to death may follow. On the other hand, too small doses may stimulate rather than depress the formation of leucocytes. Thus, several cases have been reported in leukemia developing in those who are exposed much to the rays. In the lymphatic type, every available lymph-node is treated, while in the myelogenous type more good will follow exposure of the spleen than of the bones.

Good results after the use of the Röntgen rays are seen in about 75 per cent. of the cases (improved general condition, disappearance of the anemia and diminution in size of the lymph-nodes and spleen). In a few cases, there almost seems to be a cure. The lymphatic type is less amenable to treatment as are also the relapses, which occur sooner or later. In every case, the blood should be carefully watched. A contraindication to further treatment with the X-rays is the appearance of numerous myeloblasts in the blood, when thorium X followed by arsenic should be substituted.

Other drugs used for leukemia are radium, mesothorium and thorium X. These rare elements possess the advantage that they often act surprisingly well where the Röntgen rays are ineffectual. As with the latter, too large doses will give rise to hepatic necroses, inflammation of the renal parenchyma and disintegration of the normal erythrocytes. Thorium X may be given by mouth, intramuscular injection,

but preferably by intravenous injection. The subcutaneous application is usually too painful. As it is excreted to a great extent by the intestines, the bowel should be kept open. The results are similar to those obtained with the Röntgen rays: about 20 per cent of the cases prove refractory and while the blood may return almost to normal, relapses are sure to follow. The myelogenous form is more amenable to this treatment and, as with the rays, the blood must constantly be examined. Disagreeable after-effects, such as nausea, vomiting and fall in blood-pressure are rare with medium doses. Contraindications are tendency to hemorrhage and hemorrhagic diathesis, liver and kidney diseases and catarrhal or ulcerative processes of the gastro-intestinal tract.

Of more importance to the general practitioner is the use of benzol. This drug also has a tendency to cause degenerative changes in the liver and kidneys and about 50 per cent. of the cases, particularly the lymphatic type, prove refractory. There may be a period of latency, lasting for weeks, during which time the number of white cells may even increase, but soon a pronounced improvement will be noticed in suitable cases. The dose recommended is 4 Gm. daily in gelatin capsules, diluted with an equal amount of olive oil. Some authors prefer to give the drug by rectum, but the subcutaneous or intramuscular administration is too painful. It is best to discontinue treatment as soon as the whites have fallen to 20,000. The contraindications are the same as with thorium X.

The opinion of the value of these drugs still varies. The combined treatment presents the advantage that it is possible to get along with smaller doses; thus, 1 Gm. benzol a day will usually prove adequate if the X-rays are also used. The Röntgen treatment is the least harmful of all as far as the general organism is concerned. Where, however, many myeloblasts are present, thorium X followed by arsenic is to be preferred. In the interval between the relapses, the Röntgen rays or small doses of benzol may be given.

In the aleukemic type, where there are merely qualitative changes in the leucocytes and no or very little general increase, conservative treatment is indicated and the comparatively harmless arsenic should generally be selected unless the anemia becomes rapidly worse and the tumors increase in size so as to cause pressure symptoms. Energetic treatment is only too apt to cause a rapid increase of the white cells in the blood.

Very little can be said as to the therapy of the acute leukemias, those strange disorders which resemble acute infectious diseases and are rapidly fatal. Injections of small doses of thorium X and arsenic occasionally cause short remissions. The treatment must chiefly be symptomatic and directed against the hemorrhagic diathesis and the tonsillar affection.

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Asthma Treated with Pituitary Extract

Most cases of asthma according to L. Borchardt are treated at the present time with atropine, which paralyzes the vagus and with adrenalin which tones up the sympathetic system. It seemed but natural to try pituitary extract, as its action is very similar to that of adrenalin but more prolonged. The author has used pituglandol and hypophysin, and finds that the subcutaneous injection of 1 Cc. will usually check the attack and effectively prevent its recurrence. The desired effect is, however, obtained more slowly than with adrenalin. Bad results were not seen except occasionally faintness in children who had received the full dose. It is impossible as yet to speak of a permanent cure as the cases were under observation for only three months. The results were as good as those following the endobronchial application of adrenalin.—Therap. d. Gegenwart, Dec., 1913.

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Treatment of Bronchial Catarrh

M. Saenger noted several years ago that excessive perspiration, usually controlled only by atropine, may also be checked by the fluid extract of hydrastis canadensis. He now states that 20 to 25 drops of the preparation given three times a day is an excellent drug for bronchial catarrh, whether tubercular or not. The sputum is reduced in amount and becomes less viscid so that there is less trouble in bringing it up. Still better results are obtained with 10 drops three times a day of a 5 per cent. solution of hydrastinine hydrochloride. It is an interesting fact that other cardiac and vascular drugs have the same effect. The following were tested by the author: Adrenalin, suprarenin, caffeine sodium benzoate, and tincture of digitalis. If used for a longer period, hydrastis sometimes gives rise to a slight hemoptysis.—Muench. med. Woch., May 5, 1914.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Lymphatic Disease of the Skin.—G. Arndt, of Berlin, Germany, describes the skin troubles in lymphadenosis. He thinks the old terms of lymphatic and myeloid leukemia should be replaced by aleukemic, subleukemic and leukemic lymphadenosis and myelosis. The essential pathologic feature of lymphadenosis is the generalized overgrowth of the lymphatic hematopoietic tissues and the essential feature of the myelosis is a generalized hyperplasia of the myeloid tissue. According to the blood changes we distingusih in lymphadenosis an aleukemic form, if the blood is normal, a subleukemic form if the number of white cells is normal, or nearly so, but the proportion of lymphocytes is increased, and a leukemic form when there is an increase in both the leukocytes and in the lymphocytes. The changes in the skin in the beginning of lymphadenosis may be clinically and histologically divided into non-characteristic changes and changes representing proper localizations of the lymphadenotic process in the skin. The former are called leukemids (Audry); the latter are the true lymphadenoses of the skin. Among the leukemid skin lesions he includes the purpura of the large-celled leukemia where the enlargement of lymph nodes, liver and spleen may be absent. The prurigo lymphatica of Wagner, the cases of exfoliative erythrodermia of lymphadenosis closely resembling the pityriasis of Hebra of which no reliable blood count has been made so far as he knows and which he seems to think may be pathologically the same. The proper lymphadenosis of the skin represents a pathologic condition completely equivalent to the changes of the inner organs caused by a general hyperplasia of the lymphatic tissue. The lymphadenosis of the skin may be divided into a diffuse or universal form and a circumscribed form causing flat infiltration nodules or tumor-like swellings. The former is exceedingly rare and is not accepted by all authors. The cases which are in no doubt as regards their lymphadenotic nature number only four so far reported. The diagnosis of the circumscribed form is less difficult and the two forms never pass into each other. The circumscribed patches are observed in all forms of lymphadenosis. The symptoms and diagnosis of all of these forms is discussed in full detail which cannot be well reproduced in an abstract. The leukemids present special difficulties in diagnosis and the blood picture is not always reliable as they may occur in the aleukemic or subleukemic types. There are two theories of the pathogenesis of these skin troubles: 1. That of the migration of the lymphocytes and their deposit near the blood-vessels without or with only slight local proliferation and (2) the theory of Pinkus, on the other hand, that it is due to a local proliferation of the preformed lymphatic tissue of the skin seems, admitting Ribbert's views as to the general distribution of lymphatic tissue, to be most plausible. On the other hand it is possible that some of the lymphocytes come from the blood. We know nothing absolutely certain as to the etiology. So-called acute leukemia is of perhaps infectious origin although it is quite impossible sometimes to exclude a secondary infection. Some authorities think the acute forms entirely distinct from chronic lymphadenosis, in regard to which there are also different opinions, some suggesting infection, others calling it a neoplasm and still others a special trouble quite different from both. The prognosis of lymphadenosis of the skin is that of lymphatic leukemia in general. —Jour. A. M. A., Oct. 10, 1914.

Beriberi and Scurvy.—S. T. Darling, of Ancon, C. Z., reports observations on scurvy largely made in South Africa. A number of post-mortems were made and some pathologic material collected. He was struck at the first necropsy by the remarkable appearance of the heart which suggested the picture of right-sided hypertrophy in beriberi. Since his return Darling has microscopically examined the vagus and the heart muscle of some of the cases and found some of the same types of degeneration as seen in beriberi. Following up the observations of scurvy a number of other studies were made which show family relationships between scurvy, a classical example of the food deficiency of cachexia and beriberi, and also others of the group of dietetic cachexia. At one extreme is rickets, a type of pure "osteocachexia," to use Watkins-Pitchford's term. At the other extreme a pure neurocachexia such as polyneuritis gallinarum. Between these two types are scurvy, infantile scurvy, the experimental scurvy of guinea-pigs, ship beriberi, beriberi (two or more types), infantile beriberi and epidemic dropsy and neuritis. All of these types are briefly described and a table showing their affinities and pathologic features given. Darling quotes the classification of Funk, who also includes pellagra in this group of nutritional diseases of deficiency of vitamins. In this Darling thinks he is unwise. Darling's first impression of scurvy in South Africa was that the disease was an infection, but that rapidly gave way to a confirmed opinion that it was due to dietary errors. An interesting feature of the disease was that the tropical negro workmen had the disease of a more severe type and with a greater mortality than the Cape Colony natives. He emphasizes the occurrence of the cardiac lesion above mentioned, and says in conclusion: "The striking excentric hypertrophy and dilatation of the right heart with extensive fatty degeneration of the same musculature, and left heart remaining apparently normal, and the severe degeneration of the vagus nerve described here, from several fatal cases of scurvy from the Rand furnish new and additional facts which show the intimate relationship between scurvy and beriberi as to etiology. The affinities between these two diseases and certain other cachexias lends emphasis to the opinion that they are all the result of the continued use of a one-sided and deficient diet."—Jour. A. M. A., Oct. 10, 1914.

President Wilson Approves of Tuberculosis Day.—President Wilson expresses his approval of the Fifth National Tuberculosis Day Movement during the week of November 29 and also of the work of The National Association for the Study and Prevention of Tuberculosis in a letter to Dr. George M. Kober, the president of that body. He says, among other things:

"I know that I need not assure you of my very profound interest in and sympathy with the work of The National Association for the Study and Prevention of Tuberculosis, and I am delighted to know that you feel encouraged by the results of its efforts. I sincerely hope that November 29, the day which you have designated as Tuberculosis Day, will result in awakening the people of the United States still further not only to the necessity, but to the perfect feasibility, of arresting and preventing this terrible disease."

A number of governors are issuing proclamations on the Tuberculosis Day Campaign, calling on the churches and schools to unite during the week of November 29 in an educational campaign against tuberculosis. The movement is not for the purpose of raising funds, but simply to bring to the people all over the country the essential facts with reference to the treatment and prevention of tuberculosis.

Clergymen and others may secure literature for the preparation of addresses and for general distribution from their local anti-tuberculosis societies or from the office of The National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second street, New York.

Origin and Nature of Fetal Movements.—E. A. Graham, of Chicago, in "Surgery, Gynecology and Obstetrics" for Sept., 1914., describes experiments made by him with guinea-pigs far advanced in pregnancy. The method adopted for direct observation of the fetal movements has been opening the uterus but leaving the membranes and placenta attachment undisturbed. The methods used to produce asphyxia of the fetus have been: (1) ligation of uterine vessels, (2) occlusion of the trachea of the mother, (3) direct inhalation of CO_2 by the mother. In all the experiments which involved opening of the abdomen a light ether anesthesia was maintained throughout, and the animals were killed with ether at the close of the experiments without being allowed to regain consciousness.

Graham found that asphyxia of the fetus of sufficient grade will result in the production of fetal movements, more or less severe. The movements thus produced vary from mere attempts at respiration, sometimes resembling the fetal hiccup of Mermann, to more muscular contractions, simulating the general convulsions of CO_2 poisoning seen in the adult. At times these are sufficiently violent to be seen through the abdominal wall as distinct shocks. All of the generally recognized varieties of fetal movements, except those concerned with swallowing and sucking, have been produced experimentally by methods which induced an asphyxia of the fetus. The intra-uterine respiratory efforts are not accompanied by an aspiration of any appreciable quantity of fluid into the lungs, and hence are not incompatible with life after birth. The explanation of this is not clear, but probably the contact of the skin with the air is an important factor in opening up the respiratory passages. The hypothetical intra-uterine rhythmical respiratory movements of Ahlfeld were not observed. The suggestion is made that the various active movements of the fetus experienced by many pregnant women in the latter part of pregnancy are expressions of a more or less severe, but usually transient, asphyxia of the fetus.

Effect of Chronic Alcoholism on Sexual Organs.—Many clinical and experimental studies have shown that alcohol has a toxic effect on the organs of the body and on the sexual glands. E. Bertholet tried to ascertain whether this injurious effect could be demonstrated microscopically. Therefore, he made microscopic examinations of the testicles of 163 chronic drinkers and of 100 non-drinkers. He found that the chronic alcoholics died sooner than the abstainers, and that all the organs of the former seemed to degenerate more frequently and to a greater degree than those of the latter. The testicles were the organs most frequently involved, 86 per cent. of them showing signs of degeneration. This degeneration began very early and led very quickly to complete atrophy of the testicle and to azoöspermia. Fatty degeneration was the first change to set in and it proceeded very rapidly. There was also sclerosis, with cells interspersed through the connective tissue, and progressive atrophy of the glandular parts of the seminal ducts. Unfortunately, he could not get much material for examination of the female glands, but he obtained the ovaries from ten female alcoholics. He believes that the effect of alcohol on the female glands is as great and as rapid as on the male. He did not find a single normal ovary in the cases examined.—Zentralbl. f. Gynäk.

The Vasomotor Apparatus in Pneumonia.—"There is a wide-spread belief that the vasomotor cells of the nervous system are peculiarly susceptible to the harmful effects of a variety of toxic agencies. Apparent failures of the circulatory apparatus to respond in a normal way to the demands made on it in certain abnormal conditions," the "Journal of the A. M. A." believes "are very commonly charged to inefficiency or fatigue of the vasomotor center, which has accordingly been made responsible, in the lack of more tenable explanations, for pathologic manifestation of varied sorts and diverse origin." In its issue of October 3 the Journal notes that in pneumonia, cardiac failure is generally ascribed to the effect of the toxins on the heart, although less commonly complicating conditions such as pericarditis and collateral edema or previous organic disease of the heart are called to account for the symptoms. "Vasomotor paresis," it says, "affecting the splanchnic area is further charged with being a factor in the heart exhaustion. One of the foremost American investigators of the physiology of the circulation, Prof. W. T. Porter of the laboratory of comparative physiology in the Harvard Medical School, now denies the long-maintained proposition that the toxins of pneumonia specifically injure the vasomotor cells of the organism. He and his colleagues have subjected this important question to study in animals in which experimental pneumonia was produced either by injection of cultures of infective organisms down the trachea into a bronchus or by introduction of pneumococci directly into the circulation. The condition of the vasomotor center can be determined by measuring the reflex change in blood-pressure produced by stimulating various afferent nerves. The Boston investigators admit that earlier experimenters, using the methods of their day, have failed to show a normal change of blood-pressure in this way; but with more perfect methods they have now demonstrated a normal vasomotor reflex in individuals with almost wholly consolidated lungs and about to die. Thus, even in fatal pneumonia, the experimental evidence proves that the vasomotor center is not impaired. To those who are inclined to place disease symptoms and their etiology in man on a plane by themselves it may be of interest to add that it was possible, in the types of animals studied, to imitate many of the phenomena seen in the human forms of pneumonic invasion. In some there were acute inflammatory processes of the lung-tissue, of the broncho-pneumonic type; in others there were the familiar areas of consoldiation, easy of clinical recognition. The vasomotor reactions were comparable in all."

THE BAD HABIT of trimming its corners is responsible for many cases of ingrowing toenail.—Amer. Jour. Surg.

Book Notes

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart A. Hare, M.D., assisted by Leighton F. Appleman, M.D. (September 1, 1914).—Diseases of the thorax and its viscera, including the heart, lungs, and blood vessels, is the subject of an interesting chapter by William Ewart, M.D., F.R.C.P. The subjects of tuberculosis and physical diagnosis are treated at considerable length. Gottheil's review of dermatology and syphilis is very thorough and interesting. The effect of the internal secretions on the skin and the new serum treatment in dermatology are discussed at length. Among other topics the author gives a timely discussion of alopecia, dysidrosis, basic fuchsin in ulcerative dermatitis, rhinophyma and syphilis. A chapter of 114 pages by Edward P. Davis on obstetrics takes up such topics as Abderhalden's test, phenolsulphonephthalein test for kidney function, toxemia of pregnancy, ectopic gestation, contracted pelvis, abortion, obstetric surgery, puerperal infection and diseases of the new born. The volume is concluded by an article on the diseases of the nervous system by William G. Spiller in which the author discusses brain tumor, speech centers, apoplexy, syphilis, tumor of the cord, multiple neuritis, epilepsy, tetanus, drug habits, etc. (Lea & Febiger, Philadelphia and New York. Paper, Price, $6.00 per annum.)

A Short Handbook of Cosmetics.—By Dr. Max Joseph, of Berlin. Second English edition, revised with appendix.—Those physicians who occasionally are called upon to aid Dame Fashion or more properly her sister, Miss Vanity, will find in this little work a valuable aid. The author rightly points out that as the public learns that a beautiful complexion or a fine head of hair depends more upon a sane mode of living, a healthy intestinal tract and a clean body than upon some high priced pomade or toilet water, they will turn from the quack to the physician. We note one fault with the book which, though not a very serious one, should be corrected in future editions. It is in the matter of translation in the prescriptions. The author has not rendered the original German terms into their usual English equivalents. So, too, he has failed to note the difference in the the Latin nomenclature as used in Germany and here. In prescription 91, for example, "oxidi" would be better than "oxydat." By the context only do we know that "sulph." means "sulphatis" and not "sulphidi" in the same prescription. (E. B. Treat & Co., 241 West Twenty-third St., New York. Price, $1 net. 1914.)

Digest of Comments on the Pharmacopœia of the United States of America, Eighth Decennial Revision, and on the National Formulary. Third edition. By Murray Galt Motter and Martin I. Wilbert. Bulletin No. 93, Hygienic Laboratory, U. S. Public Health Service, Washington, D. C., 1914.—The present digest continues the excellent, orderly arrangement of criticisms, presented in terse language, with proper references. The views of criticizers are always worth considering as they make for progress, and should be known to all who wish to keep abreast of pharmaceutical knowledge.

Pharmaceutical Botany.—By Heber W. Younken, Ph.G., A.M. Edited by F. E. Stewart, M.D., Ph.G.—This work presents the subject matter of the lectures on botany taught at the Medico-Chirurgical College of Philadelphia. The concise form of presentation is well adapted for the student's needs. Under each family of plants are mentioned the official and unofficial drugs in use, together with the botanical names and parts of the drug used. The descriptions and definitions are very briefly given, but are quite satisfactory for the student's purposes. (P. Blakiston's Son & Co., New York. Price, $1 net. 1914.)

Beiträge zur Klinik der Tuberkulose und spezifischen Tuberkulose-Forschung. Herausgegben und redigiert von Prof. Dr. L. Brauer. V. Supplementband. "Untersuchungen über die Arnethsche Methode der Bestimmung des neutrophilen Blutbildes und das neutrophile Blutbild bei Gesunden," von A. von Bonsdorff. Mit 4 Kurventafeln. An exhaustive essay of some 200 pages, detailing the author's experiments with Arneth's method. The work includes a number of tables to illustrate the diagnostic and prognostic value of enumeration of the nuclei of the neutrophilic leucocytes, and their relative phagocytic power. A valuable bibliography is appended. (C. Kabitzch Verlag, Würzburg. Price M. 7.)

Pamphlets Received

The Registration of Vital Statistics and Good Business. By Louis I. Dublin, Ph.D.

Economic Influence on the Medical Profession of the Periodic Examination of Insured Lives. By Eugene L. Fiske, M.D. Reprinted from Lancet-Clinic.

Kurze praktische Auleitung zur Erkennung aller Formen des Kopfschmerzes von Dr. Lobedank. Curt Kabitzsch Verlag in Würzburg, 1914. Price, M. 2.

The Chemistry of Neurasthenia. By John Auld, M.D. Reprinted from Medical Times, August, 1914.

Chronic Intestinal Stasis Surgically Considered. By William Seaman Bainbridge, A.M., Sc.D., M.D. Reprinted from N. Y. Med. Jour., Jan. 24, 1914.

The Significance of Intra-Abdominal "Bands," "Folds," and "Veils." By William Seaman Bainbridge, A.M., Sc.D., M.D. Reprinted from Boston Med. and Surg. Jour., Feb. 19, 1914.

Würzburger Abhandlungen aus dem Gesamtgebiet der praktischen Medizin. XIV Band. 9 Heft. Gedanken und Erfahrungen zur Aetiologie, Symptomalologie und Therapie des Asthmas. von Hofrat Dr. Krez. Curt Kabitzsch Verlag in Würzburg. Price, M. 85.

Seventeenth Annual Report of the Columbus Hospital, 226 E. 20th St., New York City.

One hundred and fifth Annual Report of the Société Française de Bienfaisance de New York, 450 W. 34th St.

Insurance Against Smallpox.—An English public vaccinator states that for the past eleven years he has offered, in connection with every vaccination showing four good vesicles, $250 if smallpox is contracted within ten years. At a time when smallpox was prevalent in his community, he gave a written undertaking to pay the sum of $4,000 to any clergyman who submitted to revaccination and who contracted smallpox as a result of a daily visit to the patients in the smallpox hospital.—Monthly Bulletin, N. Y. State Dep. of Health.

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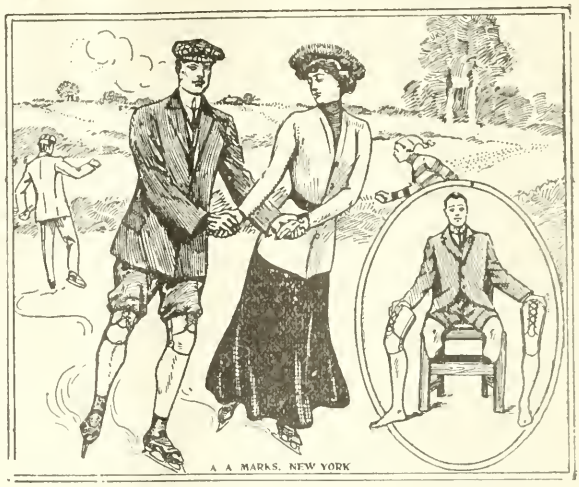

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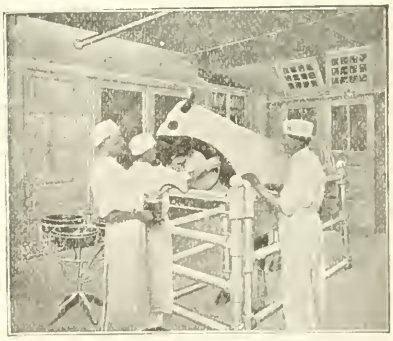

Bleeding immunized horse in operating room. Care is taken to insure asepsis.

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The **value of bacterin treatment** in pneumonia is recognized. Like the serum, the bacterin should be polyvalent, and administered at the earliest possible moment. It is frequently employed as an adjunct to serum treatment, stimulating the production of greater amounts of antibodies by the patient.

Time is a vital factor in the treatment of pneumonia. For this reason the advisability of the early use of **Pneumo-Serobacterin Mulford** should be carefully considered; its action is prompt and larger doses may be given at short intervals, securing quicker immunity.

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A series of "mass" experiments in preventive immunization against pneumonia were recently carried out in South Africa by Sir Almoth E. Wright, in conjunction with Morgan, Colebrook and Dodgson, upon a large number of native miners having very low resistance against the pneumococcus.

Summarizing their report, the *London Lancet* says: "It seems difficult to resist the conclusion that the pneumococcus vaccines employed by these observers lessened the incidence and mortality of pneumonia and other conditions produced by the pneumococcus, and among large collections of natives who were highly susceptible to its activity and under conditions favorable to the spread of infection."

The work of Wright and his collaborators verifies in a conclusive manner the usefulness of prophylactic immunization against pneumonia.

Pneumo-Serobacterin Mulford is supplied in packages of four graduated syringes, A, B, C, D strength, and in syringes D strength separately.

*Rufus Cole, M.D., New York, 1913, Jour. A. M. A., lxi, No. 9, p. 663.

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Miscellany

Now instructive, now amusing—but always interesting and worth reading

Our readers will gain much that may be of great value to them by looking over the advertising pages of this issue. There are a number of very generous offers that may be taken advantage of by merely addressing a post card to the advertiser and mentioning MERCK'S ARCHIVES.

COMPANIONSHIP IN MENTAL NURSING.—H. R Stedman enumerates a few of the daily duties involved in the private work of the expert mental nurse who is alive to her patient's needs. She reads to her charge systematically. She also sees that the patient reads, even training her to read aloud regularly for a definite time each day. Systematic occupation goes a great way toward distracting and engrossing a patient's thoughts. Almost all available kinds are helpful, according to the age, strength, and sex of the patients, from embroidery and arts and crafts work to wood cutting and chopping, provided it be free from drudgery and is varied and shared in by the nurse. The nurse will also often have to help in a patients correspondence and to urge her to write to her relatives or friends. The accomplished companion-nurse will also have as a part of her armamentarium some proficiency at games of various kinds, indoor and outdoor. The mental nurse would suffer no loss of efficiency and have more time to get closer to her patient if such branches as bacteriology, uranalysis, gynecology, and obstetrics, and much of the anatomy taught, were in some cases omitted altogether and in others materially curtailed. This done it might be possible to substitute with still a good margin of time, a "current events" class, for example, a lecture or two on the means for diverting the single patient, reports of personal interviews with patients and their domestic and other troubles, which might have a bearing on their condition and their future needs, etc.—Boston Med. & Surg. Jour.

THE RÔLE OF TOBACCO IN THE WAR.—We may surely brush aside much prejudice against the use of tobacco, says an editorial writer in the Lancet, when we consider what a source of comfort it is to the sailor and soldier engaged in a nerve-racking campaign. With us at home it is a common experience that the smoking of a pipe, cigarette, or cigar does much to allay the restlessness and muscular irritability engendered by mental and physical fatigue. There can, indeed, be little doubt that tobacco fills an important place in the psycho-physiological affairs of the human race, and that the habit of smoking (which does not include over-indulgence and self-poisoning) does something to temper the intensity of the struggle. There are exceptions, of course, but smoking is a custom which has widely prevailed amongst men distinguished by their soundness of judgment and by their success in the worlds of art, science, and literature—men who have played a great part in solving the problems of existence in its many difficult details. Huxley once confessed that amongst his fellow students at the hospital he was exposed to considerable temptations to smoke, but on his essaying to acquire the habit he soon found himself on the floor. He gave it up for forty years. On the occasion of a tour in Brittany, however, he found on a very wet and cold day a companion who looked so happy with his cigar, before the warm fire within the inn that he thought he would try to smoke again. "And then I found myself a changed man. I found that I was in the position of a lamentable 'pervert,' although the person who led me astray was most distinguished and a late president of the British Association. From that day I date my ruin. For, from that day, whenever smoking is going on, you may be pretty sure that I join in it." To the soldier and the sailor in the present war, with his nervous system in a ceaseless state of tension from the dangers and excitement, tobacco must be a real solace and joy when he can find time for this well-earned indulgence. Abuse of the habit is, of course, pernicious, but to quote Huxley again: "Anyone could undertake to destroy himself with green tea or any other article of diet if carried to excess." The risk, at any rate, is as nothing compared with an abuse of alcohol. The hope is thoroughly justified that the soldier in the present campaign will be generously supplied with this indisputable creature comfort.

THE ECTO-PARASITES OF MAN AND LOWER ANIMALS have been given considerable study recently and the studies have unquestionable medical relations which we would do well to consider in our studies of the transmission of disease. Prof. V. L. Kellogg, of Stanford University ("Science") says that there are two groups of wingless, permanent ecto-parasites, as distinguished from the fleas which hop from host to host and whose immature life is non-parasitic. Other biting animals, flies, mosquitoes, etc., are not included. One group of true parasites, the biting lice or mallophaga, feed on hair and feathers, and though nearly 2,000 species are known, they are chiefly on birds—only two are on lower monkeys and none on man or the anthropoids. As a rule, they promptly die when transferred to man. Of the sucking lice, anoplura, less than 100 species are known and they are confined to mammals. Two genera, pediculus and phthirius, appear on man, and of the latter there is but one species which is confined exclusively to him. Of the six species of pediculi, two are confined to man, one to the chimpanzee, one to the gibbons and two to an American tailed monkey (Ateles). There are other pediculine species on other tailed monkeys. Kellogg has shown that as far as birds are concerned these parasites are distributed according to the genetic relationships of the hosts rather than geographically or by other factors. It was possible to show kinship of doubtful species of birds by the similarity or identity of their parasites. This now seems to hold for man and the anthropoid. The two are near enough related to have lice of the same genus, but are far enough apart to have different species, and man has a special one. The Ateles genus of monkeys seem to be an exception for they harbor lice nearly related to those of the anthropoids, but it is shown that these monkeys have great resemblance to the Old World anthropoids. Those diseases (typhus etc.) which are supposed or proved to be carried from man to man by pediculi, are thus peculiar to man and are not shared with the lower animals, like plague, which is carried by fleas which will attack both. This would seem to indicate that certain diseases which afflict man alone, might be carried from man to man by the parasites which are peculiar to him. Leprosy has been thought to be carried this way, and though the lower animals can be given this infection in the laboratory, they do not get it in wild life because no human

parasite will bite them. It is an academic matter which might prove to be of great practical importance. At any rate, there seems to be less ground for the fear that the true parasites of the lower animals transmit diseases to us. We have enough to worry about without this old fear. Our pets may not be as black as they are painted by the over-finical. Our diseases are largely confined to ourselves, and have been evolved with us since our anthropoid stage, and simple cleanliness is generally an efficient preventive of their spread. It is remarkable how rapidly the sum of scientific research is evaporating the dark fogs of old fears, dreads, phobies and imaginary horrors.—American Medicine.

Cancer Vaccines.—The results of six years' study of cancer vaccine and anticancer globulins as an aid in the surgical treatment of malignancy are given by J. W. Vaughan, of Detroit. The work is based on the theory first published in 1910 that through altered chemical nature the normal tissue cell changes into the malignant cell. If a malignant cell is chemically different in its protein content from a normal tissue cell, it ought to be possible to sensitize an animal to one protein and not to another. Vaughan says this has been proven and it has also brought into notice a new and very interesting form of sensitization that has been called "transitory sensitization." He has hitherto refrained from publishing therapeutic results because sufficient time had not elapsed for correct judgment. Now, however, he reports the first one hundred cases which have been under observation for at least one to six years. Subsequent cases have been more gratifying as thus far observed but definite conclusions cannot be offered as yet. Early in 1910 he began the injection of serum obtained from sheep and rabbits when their large mononuclear count was highest, after sensitization to cancer protein in cases of sarcoma and carcinoma. Twelve cases were previously published in which injections of rabbit and sheep's serum in sensitized animals were used. These were inoperable or recurrent cases. In all there was improvement in the condition of the malignant growth, but the treatment had to be discontinued on account of the kidney complications, etc. Vaughan thinks the use of the serum containing the specific ferment will fail to be practicable for these and other reasons. The next step was to ascertain whether the specific ferment could be obtained free from the undesirable serum proteins and an attempt was made to remove the ferment from the large mononuclear leukocytes. This can be done, but still the ferment is far from being completely purified. In the cases reported here the term vaccine is given to cover the number of injections of both cancer cell vaccine and cancer residue while the term ferment includes serum, unfiltered and filtered leukocyte extracts, globulins and in a few cases the leukocytes *in toto*. For the exact meaning of these preparations Vaughan says see "Protein Split Products in Relation to Immunity and Disease," Chapter XIV. The method of administration is not designated but the general conclusion from several injections are considered altogether. The most of the cases are reported only briefly. Of the one hundred, fifty were considered inoperable. Of these two are well without recurrence and four are markedly improved, which in this division would give 4 per cent. of apparent recoveries and 8 per cent. the outcome of which is still in doubt. "The cases which showed definite recurrence, which, however was comparatively small in amount, were fourteen in number. Of these six are apparently well and three improved. There are five cases which show small operable lesions in which operation was refused. Of these four are clinically well and one improved. The advanced cases in which operation was performed in combination with specific treatment were thirty-one in number. Of these 23 or 73 per cent. are apparently well, one displayed rapid recurrence and seven seemed to receive no benefit. All cases except one were microscopically malignant, the one case being that of breast carcinoma in which axillary involvement was present and in which the patient refused operative interference. The study of the blood counts made in these cases has led to the conclusion that cases in which the percentage of large mononuclear leukocytes increase to from 10 to 20 per cent. following specific treatment, do well, while those that run a high polymorphonuclear count, and in which the percentage of large mononuclear cells is not materially increased, are not benefited." With regard to the use of either vaccine or residue, Vaughan says that their field is limited. The best results are obtained in cases where the amount of tumor tissue is small and where the differential leukocyte count of the patient shows a decided reaction following the administration of the cancer protein. From a study of the increase in the large mononuclears in animals, the largest increase occurs after an intraperitoneal injection, and during the past year he has used this method almost exclusively. A vaccine residue is efficient only in cases which respond with a large increase in the percentage of large mononuclears and its chief use should be in operable cases where a single intraperitoneal dose is given twenty-four hours before operation in order that the blood stream may have present in it some specific ferment which can be available for the splitting up of malignant cells not removed and such cells as escape into the blood or lymph channels during operation. In regard to the ferment it can best be said that all cases seem to show benefit from the first three or four doses, after which it seems to lose its efficiency. It is only active for about ten days; the body in all probability forms a sufficient antiferment by that time. To overcome this difficulty a series of cases was treated by giving from two to five doses of ferment, followed by two injections of residue to use up the anti-ferment. Clinically this gives better results in advanced and inoperable cases that do not respond to any other method. Doses of globulin should be from 50 to 100 Mg., and they

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are most active by the intravenous route. In conclusion Vaughan says that he does not believe that any method of specific therapy will be of much avail in cases that have large amounts of malignant tissue present. In such cases the use of large amounts of globulins may prove fatal. The real value of either vaccine or ferment will be in connection with operative removal in order to destroy such cells as are not removed by operation.—Jour. A. M. A., Oct. 10, 1914.

Ceremonious.—If there is one thing a commercial traveler dislikes more than another it is elaborate ceremony; and if the spirit of his profession is in him he generally finds some way to let his prejudices be known. One evening a traveling salesman from Cincinnati happened to sit down at a hotel table in company with half a dozen state legislators, who talked with excessive formality. It was "Will the gentleman from Hardin do this?" and "Does the gentleman from Franklin want that?" the ordinary form of address being carefully eschewed.

For nearly ten minutes the commercial traveler suffered in silence. Then he turned to the waiter and said in deep, oratorical tones:

"Will the gentleman from Ethiopia please pass the butter?"

The remedy was effectual.

Laboratory Dont's.—Don't expect the Laboratory *alone* to make the diagnosis, prognosis and suggest all the treatment of a case. The laboratory does not pretend to push aside clinical symptomatology.

Don't abandon a diagnosis of pulmonary tuberculosis because you fail to find tubercle bacilli in the sputum. Remember that a positive finding of tubercle bacilli is a late diagnosis, not an early one, of pulmonary tuberculosis.

Don't forget that hoarseness of the voice, without any other good reason is suggestive of laryngeal tuberculosis. In such cases you ought to find tubercle bacilli early in the process.

Don't rely on the microscopical evidence of renal tuberculosis. Remember that in renal tuberculosis the positive diagnosis can best be made by inoculating a few guinea-pigs with urinary sediment and watching them develop tuberculosis.

Don't rely on the Von Pirquet skin test for tuberculosis except in children. Remember that many of us have passed through and recovered from incipient tuberculosis without ever having known it. Such cases later on in life if tested will give a positive Von Pirquet test. A negative Von Pirquet in an adult is usually very significant in that the individual never has had tuberculosis and does not have it now. A positive Von Pirquet may mean that he has had tuberculosis or that he has it now. It does not differentiate between a past and a present tubercular infection.

Don't use bacterial vaccines unless you know the nature of the offending microbe.

Don't use biological products unless you are acquainted with the rationale of their preparation and action.

Don't expect to cure rabies once the symptoms have developed. Remember that the time to administer preventive treatment is any time within ten days after the infliction of the dog-bite.

Don't kill the dog when he bites a patient. Keep him under observation until he develops rabies. There will still be ample time to administer the Pasteur treatment. You may find the Negri bodies in the brain of the dog if he is killed right away, but the chances are, you will not. The incubative period in man is seldom under three weeks.

Don't make a positive diagnosis of gonorrhea in the female unless you use the blood complement fixation test. There are many cases of uterine discharge which are not gonorrheal. There is no absolute method of identification of the gonococcus even with the Gram stain, unless you can isolate it in pure culture. This is difficult to carry out in uterine or vaginal discharges because of the multitude of other bacteria present which may prevent you from obtaining a pure culture.

Don't swear a man's liberty away in a case of suspected rape from the mere presence of a discharge in the alleged victim. Be sure it is gonorrheal before you say so. The microscope alone in such a case is insufficient evidence.—The Laboratory News.

"Let There Be Light."—"Let there be light"; also, let the light be placed so that it shall not glare, and be properly disposed in relation to shadows.

In the splendid campaign now on for the alleviation of occupational diseases and accidents the part taken by Mr. Leon Gaster, founder and secretary of the Engineering Society of England and Editor of The Illuminating Engineer, is most worthy of appreciation.

Mr. Gaster insists first that light (whether natural or artificial) shall be sufficient for the work to be done. In Holland a minimum of illumination has been fixed for general work; and in trades especially trying to the eyes, such as jewelry, engraving, embroidering and the like, a minimum has been established. The British Government is requiring photometric measurements to be carried out in many factories, to the same end.

Sufficient light being forthcoming, the next problem is how to use it wisely. Factory lamps are oftentimes not sufficiently shaded; and are placed so that they dazzle the eye and strain the vision. A man habitually using his eyes in strong light decomposes his "visual purple" faster than it can be regenerated. Besides, a constant, extreme fatiguing and painful muscular contraction is compelled. So the most lighted room is not always the best lighted. Very few modern illuminants are of sufficiently mild intensity to permit their use at close range. The old soft, mellow yellow candle or gas light, when there was sufficient of it, treated the human vision much more mercifully and benignantly. Powerful lamps must be screened by such well-designed reflectors as will both remove the glare, and direct the light, not upon the workman's eyes, but upon the object.

And lamps must be properly placed as to shadows. Not to one's right hand, for example, where it will shadow the sheet one wished to write upon, or the material the driller or cutter wishes to work upon. Here is a common defect in banks and offices; and many an operative's hand and fingers have been mutilated by reason of the light casting a shadow of the head or body at work. In many shops the light falls on the floor (where it is wasted), rather than upon the tables, where the work is to be done. Dangerous machinery should ever be well-lighted; it is worse than useless to place a guard about such machinery, if working it in semi-darkness invites maiming or even death.

Bad lighting headed the list of causes leading to accidents in a report of a metropolitan casualty company, in which it was shown that when darkness set in early and artificial light had to be

depended upon, the accident percentage rose progressively and became greatest in the darkest months. Throughout the year a relatively large proportion of accidents occur after four p. m.—the time when artificial light begins to be necessary. (No doubt the late afternoon fatigue is an additional factor in such accident-production. A badly-lighted shop, moreover, will become dirty and unwholesome.

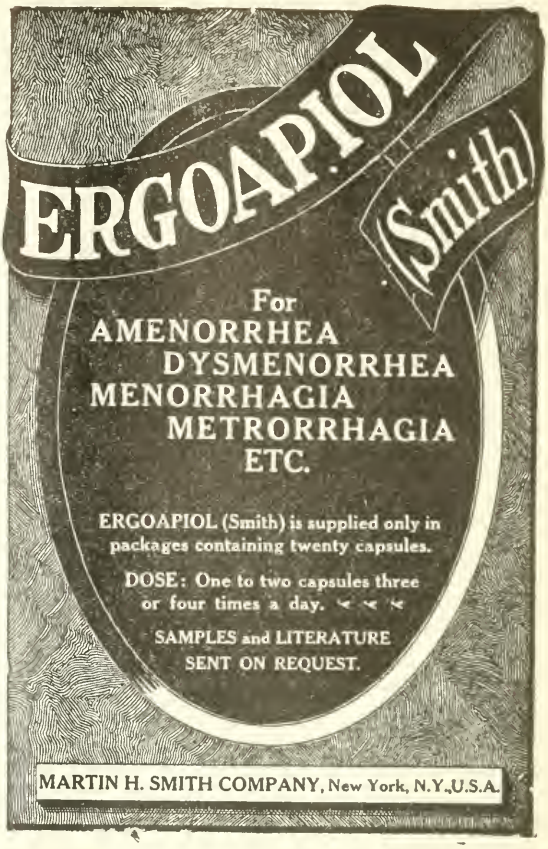
And passages are oftentimes badly lighted so that workers stumble over obstacles; when one is carrying molten lead, for example, the matter becomes no trifle. Pretty nearly as bad is it to place a bright light in front of some obstacle, so that the latter shall be in shadow, whilst the light glares into the eyes of anyone approaching. A man walked off a platform and was killed, because his eyes were dazzled by a light set to prevent just such an accident.

The normally functioning eye, like any other organ that is properly used, tends to increase in power and facility with right usage; if overstrained or ill-used it becomes progressively less and less able to do any work at all. This precious organ is really an expanded portion of the brain; more than that, the eye affects the working of other organs and is in turn affected by them. Insufficient eyesight is the cause of most chronic headaches, of some indigestions, and of many conditions of depression or fatigue. These are of course individual misfortunes; but the employer of labor is singularly blind to his own interests to imagine they do not affect him. Apart from humane considerations (which, despite pessimists, obtain generally in business), improper lighting is an economic loss for employers. In shops having insufficient or glary lighting not so rapid work can be done, besides which the worker must perforce turn out an inferior grade of article.

The proper lighting of schools is of course vastly important. Education now being compulsory, parents have a right to demand that the children whom they send to school shall have their tender eyes safeguarded while studying. Besides, children contract incipient spinal curvature and other afflictions by having to twist themselves so that the light may fall properly upon their desks or the blackboard. Lighting in the home is also frequently faulty, the eyes being blinded, whilst the page is not illuminated as it should be.

America is the pioneer in illuminating engineering; yet even we, it seems, have much to learn, and more still to put in practice, when it comes to the right kinds of artificial lighting.—Dietetic and Hyg. Gazette.

The Rôle of Climate in the Therapy of Tuberculosis.—A great deal of uncertainty still exists as to the exact rôle which climate plays in the treatment of tuberculosis. It is unfortunate that most practitioners cannot dispel this uncertainty and that tuberculous patients are frequently sent to climates that are not particularly well suited to their individual cases. The patient, particularly if he has financial means, desires to be sent to a climate that offers him the greatest advantages, but as is pointed out by G. Schröder and A. V. Muller in the "Zeitschrift für Tuberkulose," February, 1914, this quest of the ideal climate is like the pursuit of a phantom. Every climate possesses certain advantages and at the same time certain disadvantages. The physician in considering the adaptability of any place should take into account not only the sum total of its meteorological factors, but also its other characteristics which may have some important effect upon the progress of the pa-



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tient's treatment. Schröder has for a long time maintained that there is no climate that acts as a specific in tuberculosis. Climate can act only as an adjunct in the management of any case. Inland or mountain, seashore or farm, may be adapted for a particular type of case. In order to form a correct idea of the suitability of any health resort it is necessary not only to know its geography and meteorology, but also to understand its entire milieu. The advantages of a sanatorium with its discipline and regularity far outweigh those of a most salubrious climate without these factors. The authors made a comparative investigation of seven well-known climatic resorts with respect to their adaptability in tuberculosis. They selected as their type-climates for comparative studies the following places: Wyk on the island of Föhr, a cool and damp sea climate; Schömberg and Neuenbürg in the Black Forest, at a moderate mountain elevation; Frankfort-on-the-Main, noted for its sunshine and low elevation; Nice and the Riviera, a dry warm sea climate, and Davos, high up in the mountains. They found that each of these places has its advantages at certain times in the year. They found above all that Central Europe provides no optimum climate for tuberculosis, but that its different resorts have certain advantages the wise selection of which may be utilized in the treatment of tuberculosis.—Med. Record.

The Entrance of the Infective Agent of Epidemic Poliomyelitis into the Body.—For only five years have we definitely known that anterior poliomyelitis must be classed among the acute infectious diseases. In 1909 Landsteiner and Popper reported the successful inoculation of monkeys with the disease, using for inoculation material an emulsion of the spinal cord of a patient who had died in the early stages of the disease.

Since then, notably through the researches of Flexner and his associates in this country, and of Landsteiner, of Levaditi, of Kling, Wernstedt and Petterson and of Römer abroad, many additions have been made to our knowledge of the disease. Especially is this true concerning the nature of the virus, the morbid anatomy and histology of the natural as well as the experimental disease, and the routes by which the virus escapes from the body.

Of especial importance has been the announcement by Noguchi and Flexner of the successful cultivation of the causative organism by the use of special methods of cultivation. Of important public-health interest was the finding of the virus in the nasal mucosa of healthy persons who had been in contact with persons sick with the disease. Such persons or "carriers" undoubtedly play a most important part in the epidemiology of the disease, and, on account of the difficulties connected with their detection, play an equally important part in the spread of the disease wherever such persons may go.

The discovery of the existence of such "carriers" is of more practical importance from the side of the prevention of the disease than was the discovery of the ambulatory cases. The important question of the means of entrance of the virus into the body has been under discussion with no definite conclusion having been reached. The early reports on the transmission of the disease by the stable-fly (*Stomoxys calcitrans*), as reported by Rosenau, indicated that the disease was transmissible by the bite of that fly, but the work of later investigators suggested that the disease was not usually transmitted in that manner. Some workers have steadfastly insisted on the transmission of the disease by contagion, with the nasal mucosa as the avenue of entrance. Among those who have held such views have been Flexner and his associates, and, in a recent paper, Flexner and Amoss have produced experimental data of a convincing character in support of this view.

They report a large number of experiments showing the affinity between the virus and various organs and tissues, as shown by the infectivity of such organs and tissues from animals in which the virus has been introduced in different ways. It was found that when the virus was injected intravenously it was deposited promptly in the spleen and bone-marrow, but not in the kidneys, spinal cord or brain; and in spite of the affinity between the virus and the nervous tissues, the virus was not removed from the blood by the spinal cord and the brain until the choroid plexus and blood vessels had suffered injury.

It would appear from their experiments that, although the virus is brought to the nervous tissues by the lymph, the distribution through the nervous system is, in large part, by means of the cerebrospinal fluid.

The authors believe that their experimental evidence supports the view that epidemic poliomyelitis is caused by the entrance into the body of the specific agent through the upper respiratory mucous membrane to the olfactory lobes, from which, by means of the cerebrospinal fluid, it is distributed throughout the nervous organs. They add, however, that in exceptional cases other modes of infection may occur.

Should it be that these authors are correct in their view as to the upper respiratory mucous membrane being the infection atrium, we will have a full explanation of the reason for the failure of efforts to control the disease that have not taken this view into account. Strict isolation of the sick and those who have been in contact with the sick should have a material effect in limiting the spread of the infection.—Jour. A. M. A.

The Jaw-Winking Phenomenon.—More than seventy cases of this condition have been reported. According to E. A. Cockayne in the British Journal of Children's Diseases, August, 1914, the phenomenon consists in the involuntary raising of the upper lid coincident with some movement of the jaws, face, tongue or pharynx. Frequently the lid movement is accompanied by ptosis on the affected side. The anomaly is usually unilateral. In addition to ptosis there are often other defects, the commonest being paralysis or paresis of the superior rectus muscle. The movements concerned in the above reflex have been analyzed by Sinclair. In some instances with an associated ptosis the upward movement of the lid occurs when the mouth is opened with a lateral movement of the jaw. In other instances with ptosis the lid movement is synchronous with a lateral movement alone of the jaw. There are other cases without ptosis in which the lid and jaw movements are associated. Pontico found that almost all the movements were allied to those controlled by the motor branch of the fifth, or by the sixth and seventh nerves. The commonest type of the jaw-winking phenomenon is that in which the lid is raised during ordinary mastication. In some cases the lid is raised to such an extent as to show a large area of sclerotic above the cornea, at the same time that the jaw is moved laterally away from the side of the lesion. The condition is to a certain extent familial and hereditary and

tends to disappear. The most commonly accepted theory as to the pathology of the condition is that those cells of the third nucleus which supply the motor fibers to the levator palpebræ superioris are defective and that there is a direct innervation from the motor nucleus of the fifth nerve. The author suggests that a more probable cause of the phenomenon is a defect of the whole motor path concerned in the movement of the upper lid or at any rate of the part above the nucleus of the third nerve. The condition is probably the result of a defective or arrested development.—Med. Record.

The Wrapping of Baker's Bread.—In its issue of October 10, the "Journal of the A. M. A." considers the recent agitation in behalf of clean food as it concerns the wrapping of baker's bread. The Journal says: "Let the loaf be ever so satisfactory, with respect to size and symmetry, crust and crumb, when it leaves the baker's oven, it may nevertheless experience subsequent changes which sooner or later render it less attractive, palatable, or wholesome. Stale bread does not appeal to the taste in the same way that fresh specimens of the 'staff of life' do; but in addition to the development of staleness, bread may also develop so-called bread diseases caused by micro-organisms, rendering the product unfit for human consumption. Furthermore, like many other unprotected and carelessly handled articles of food, exposed bread may become a purely mechanical carrier of objectionable organisms." Already in many communities regulations are in force which compel the protection of bread and bakery products between the oven and the home. Bread wrapped with either porous or paraffined paper is now a common sight even in small villages of the United States. From the sanitary point of view it is of no small value that an article of diet so extensively employed as bread is, should be practically sterile both in the interior and on the surface of the loaf as it leaves the oven. Bacteriologic studies reported at various times leave no doubt that unprotected bread subsequently acquires a microbial flora frequently extensive in variety and number.

The wrapping of bread involves something more than the mere exclusion of living organisms and inert dirt. It necessarily interferes with the passage of moisture from the loaf. The change in the distribution of moisture in a loaf of bread is attended by the development of a different odor and flavor which is familiar under the name of staleness. Few persons are as readily satisfied with stale bread as with that which possesses the qualities referred to by the designation of fresh. Some bakers have expressed themselves as opposed to the wrapping of bread, in the firm belief that when it is kept in a close, warm, moist atmosphere from the time of baking it is far more likely to develop sourness and mold than if stored where it may cool rapidly and lose any excess of moisture.

It is not easy at present to describe the change which results in staleness. The suggestion has been offered that the starch particles composing the crumb are colloids which hold considerable quantities of water in combination. Fresh baked bread contains much more water in ther interior than in the crust of the loaf. The interior crumb is in a colloidal condition with a rather high moisture content; but, as the bread grows old, the ratio of the water content between crust and crumb is changed, the water of the latter leaving it to be absorbed by the relatively drier crust. The arresting of the passage of moisture through the crumb and the concentration thereof in the crust is injurious to the latter, and may likewise detrimentally affect the interior of the loaf. Other factors such as a development of increasing acidity with age may unquestionably enter into the problem of staleness.

A chemical investigation of the subject has been completed in the department of food and drugs of the Indiana State Board of Health by Barnard and Bishop. The data confirm the observations on the physical appearance of wrapped and unwrapped loaves. The wrapping of the bread, either in semiporous waxed or paraffin paper retards the escape of moisture and tends rather to the preservation of that "colloidal condition and physicochemical equilibrium," the destruction of which results in staleness. The belief that the moisture of the crumb is imparted to the crust, which thereby loses its crispness and becomes soft, is not borne out by the work of the Indiana chemists. Whereas, unwrapped bread loses its freshness after the first day, the early keeping quality both as to condition of crumb, flavor and odor is enhanced by the use of wrappers. There is, accordingly, no occasion at present for discarding what has seemed to many to be a wholesome innovation in the distribution of bakery products.

Black Tongue and Its Causation.—The affection commonly known as black tongue is characterized by the presence of one or more blackish or brownish patches in the tongue, which are associated with an elongation of the lingual papillæ. This condition has been attributed to a parasitic cause. A large number of different parasites, chiefly moulds, have been held responsible by various observers. The glossophyton is the one most commonly described as causative of the peculiar pigmentation of the tongue and of the elongation of its papillæ. L. Jannin, in the Journal de Médecine de Bordeaux, refers to the theory, held by a number of observers, that this is a neurotrophic disorder, in which an excessive vascularization of the papillæ would cause their hypertrophy with a deposition of black pigment. The growth of the various moulds which have been isolated in these cases would thus be favored by the changed surface conditions of the tongue. Without subscribing to this view, Jannin holds that although the parasitic theory has not been definitely established by scientific proof, it is nevertheless most plausible.—Med. Record.

Cosmetics and Anatomy.—Saalfeld, under this title, contributes an article on recent advances in dermatology. He wishes to show to what extent the prognosis for smooth recovery depends on the depth of the lesion, the more superficial being amenable in this respect. The indications have been to remove blemishes in such a manner that the skin will be left sufficiently intact and that the original lesion be not replaced by scars, stains, etc. Seborrhea and comedones can be disposed of without injuring the texture of the skin. Acne nodules may be made to disappear *en masse*. Larger lesions may heal with resulting pigmentation, which, however, is not permanent. Still larger, purulent lesions, which in the end become abscesses of the skin, tend to leave scars, because of the depth of the lesions we can only hope to abort such lesions. Aside from acne, we have to deal with non-inflammatory nodules—warts, etc. These can be destroyed without compromising the skin by a combination of methods. If, however, the wart extend deeply into the derma, a raw surface must be left behind. It is often aggravated by the previous

use of nitric acid, the healing being accompanied by the formation of ugly scars. Many a maiden has had her hands disfigured permanently by the repeated use of glacial acetic acid. It is better in such cases to give arsenic internally, with the external use of salicylic acid, extract thujæ, etc. Other cosmetic blemishes are freckles and chloasma spots. Pigmented moles also belong here. To remove pigment without scar formation is the great desideratum. The cautious use of electrolysis and the galvano cautery, carbonic acid snow, etc., will decrease the amount of pigment present. Small telangiectases may be removed scarless, but in the more deeply seated angiomata scars must result from cautery, etc. These scars are, however, a great improvement over the tumors. Some of these growths yield to the X-ray, and are much improved, without scar formation. Premature alopecia must be considered as past all restitution, provided the individual follicles have been empty for a certain period. Some fat must be secreted, but not too much. If the scalp is hidebound the prognosis for arrest of the alopecia is hopeless. For the rest a sharply individualized treatment may do something toward arresting the condition. The scalp should be mobilized and hyperemized. If a lanugo remains it may be developed into a thicker growth, but this happens rarely because downy hairs have no sebaceous follicles of their own.—Berl. klin. Woch., per Med. Record.

Action of Emetine on Smooth Muscle Fibers.—Maurel remarks that thirty communications have been recently published bearing on emetine hydrochloride in treatment of dysentery, ameba liver disease, and hemorrhages from the intestines, stomach or lungs. These results confirm his experimental research with it long ago undertaken to confirm C. Bernard's laws that toxic and medicinal substances act, not on organs, but on systems of tissue; that each has one elective anatomic element; and that this electivity is manifested throughout the animal series. Emetine acts electively on the smooth fibers, and particularly on those in the blood-vessels, causing them to contract. This contraction explains the influence of emetine on hemorrhage as it induces vasoconstriction. The contraction of the smooth fibers under the action of emetine helps to reduce congestion and inflammation in a region. In all cases of local congestion the contraction of the vessels aids in restoring normal conditions especially in bronchitis, pneumonia, emphysema, etc.—Bul. de l'Acad. de Med., Paris, March 24, 1914.

The Possible Relationship of Endemic Goiter to Water Supply.—In January, 1913, Major Robert McCarrison, of the Indian Medical Service, delivered the Milroy Lectures before the Royal College of Physicians of London, taking as his subject the etiology of endemic goiter. These lectures created somewhat of a sensation in the medical world. McCarrison concluded from a study of the behavior of endemics and of authenticated outbreaks occurring in his own experience and in the experience of others, that endemic goiter is due to the existence of a specific living excitant. He claimed that living organisms bringing about goiter were found in water and that these organisms and not dissolved salts were the cause of the affection. Drs. Taliaferro, Clark and Claude C. Pierce, Surgeons U. S. Public Health Service, in Public Health Reports, April 17, 1914, analyze McCarrison's findings and summarize their own conclusions as follows: (1) The cause of endemic goiter is not yet determined. (2) The extensive prevalence of goiter in rural communities, where families are widely separated and have separate water supplies, tends to preclude the possibility of the affection being due to a water-borne, living, organic excitant. (3) The enormously greater prevalence of goitrous endemicity in regions underlaid by carboniferous, devonian, and silurian strata, can certainly bear some relation to the water supplies which should carry in solution, or do not, as the case may be, the same or similar chemical substances. (4) The observations of Howell on the prevalence of endemic goiter in an arid region of New South Wales, in which the sole water supply is rain gathered and stored in cisterns, point to the probability of the affection being due to a deficiency of certain necessary chemical substances. (5) The experiments of Marine and Lenhart, by which goitrous fish were cured by the addition of iodine in the form of Lugol's solution to their water supply, indicate that the affection may be due to a lack of iodine in the drinking water or in vegetables grown on the soil of goitrous districts. In fact, the administration of iodine, either locally or internally, is a recognized method of treatment of the affection in man. Many recoveries are reported as due to this treatment. (6) The experimental production of goiter in man by McCarrison is in need of corroboration. His interpretations also are somewhat indefinite.—Med. Record.

American spas ought to be developed now that the European resorts are not available. We are credibly informed that we possess every kind of water which has made the European places so wealthy and popular. But we neglect our own resources under the delusion that foreign things are better than the home-made, and some people feel that the more inaccesible and expensive a place the better it must be. The medical profession can do a great deal towards making local resorts more useful, and the profession residing at or near these places can do much without the suspicion of commercialism or quackery. What is needed is a clear cut statement of the effects of the waters so that the profession as a whole can determine what cases to send to the resorts. It is a serious reflection on us that so many thousands or even millions of patients have spent small fortunes in trips abroad when they could have had the same things near home for a fraction of the cost. Of course we cannot duplicate the mental and nervous effect of a vacation in Europe —and that seems to be the only benefit many patients receive, but Europeans get relief at their own resorts, and we should at ours. Change of scene and travel are just as beneficial here as in Europe. The greatest need is to make our resorts available for people of moderate means and the poor, but that requires endowments which can only come with time. To aid in bringing this to pass, let us neglect no opportunity of spreading broadcast the fact that our American spas and waters are not only equal to any in the world, but that many of them stand alone in more than one important respect.—American Medicine.

Institutional Epidemics.—The recent outbreak of a fever in an orphan asylum in New Jersey directs attention to the frequency with which the press chronicles epidemics in all institutions for the care of the helpless or criminal. No sooner do we get over the shock of the spread of scarlet fever to practically all the convicts in a prison, when we learn of typhoid fever in another. Orphan asylums seem to be particularly prone to outbreaks of diphtheria, though all the

diseases of childhood naturally have ideal chances to spread. Something is wrong. What is it? Only a few years ago we were shocked to learn that all foundlings soon died in spite of institutional care given to them. We then realized that each of these delicate pink bits of humanity required the care of one, two or more persons, and that one nurse could not possibly give proper attention to several infants. So we tried the successful experiment of placing each baby in a family where it could inspire love as well as pity, for without love no woman can sacrifice herself sufficiently to give a baby the unremitting attention upon which its life depends. We have been wondering whether there is not a similar fault in all institutions for children. The pitiful and mournful little tots seem so utterly lacking in normal nosiy exuberance and so subdued and unnatural that something must be wrong. They are deprived of the needed comfort of coddling and must be starving for love. Could this put them in a condition of hyper-susceptibility to infection? The identical condition in adults has been dignified by a name-nostalgia—because it is a serious matter in soldiers and has been known to be fatal of itself, as well as to make them easy and early victims of camp infections so common in crowds. In addition, the child survives because more or less isolated from others. Crowding is unnatural, yet orphan asylums and other institutions have done such incalculable good, that it seems almost a crime to say anything against the system. To be sure, the fixed policy is to find a home for each child as soon as possible, but in the meantime should there not be more pains taken to prevent the introduction of infection among these specially susceptible little unfortunates? We are quite sure there is nothing bordering on neglect, but merely a too prevalent ignorance of the fact that more care is needed than in the family.—American Medicine.

Functional Tests of the Heart.—It has long been the ideal of diagnosticians to be able to recognize in practice not only the functional capacity of an organ at a given moment, but the future outlook as well. The former task is comparatively simple, as the patient may be readily submitted to an extemporaneous strain, while the heart's action may be followed up from day to day. The ultimate outlook is not only difficult to determine *per se*, but is conditioned by affections of other organs—the kidneys, great vessels, and so on. In general, quick response to the action of cardiac stimulants is good prognostic evidence; but, as all good clinicians aver, the heart has a certain life of its own, which cannot possibly be measured or foreseen. The greatest clinicians, even when placed on their mettle by the importance of the lives concerned, have been forced to admit that hearts may be made of shoddy stuff; while good enough to pass muster under tests of all sorts, such organs suddenly cease to act even in the midst of the most vigorous pushing of analeptic remedies.

At a recent session of the Berlin Society for Internal Medicine and Pediatrics (Münchener medizinische Wochenschrift, May 26) Katzenstein referred to his method of increasing arterial resistence in animals—for it is in the latter that the first steps of the problem should be worked out. If a healthy dog has its abdominal aorta ligated, the blood pressure is increased until a collateral circulation is established. The vasomotor nerve system is not a whit concerned therein for the phenomena are the same after division of the spinal cord. Ligation of the abdominal aorta causes hypertrophy of the left ventricle. If this ligation is not followed by increased blood pressure, there sets in increased rapidity of the pulse, and the animal dies with dilated heart.

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blood pressure have been measured. Other measurements are then taken after the period of compression. If the heart is sufficient, no marked changes occur, and the same is true of slight insufficiency. But if the insufficiency is marked the pulse is increased and the blood pressure diminished.—Med. Record.

Frigilitas Ossium.—M. Ostheimer, of Philadelphia, reports a case of fragilitas ossium in a female child of three years, breast-fed for one year and with no previous illness except pertussis. The parents said she fractured her leg whenever she tried to stand up; at three years she fractured the humerus. The musculature was good; the head showed protuberance of parietal bones; the neck was short; thorax pigeon-breasted; reflexes normal; the blood showed 3 per cent. eosinophiles; Wassermann and von Pirquet negative. She was taken to the Philadelphia Hospital on account of a gonorrheal vaginitis. The parents took her away from the hospital, after which she often fractured her legs. When last seen she could walk a little, but her appearance was anemic. Up to the age of four she had had nine fractures. The literature of these cases showed 193 cases in all. The term fragilitas ossium was used to include the two types of the disease, both the fetal type and that found after birth with imperfect bone formation in which fractures occurred until puberty or even adult life. The cases did not include osteomyelitis due to syphilis or tuberculosis. In this disease the layers of the periosteum were thickened; the marrow contained much connective tissue; the formation of normal osteoblasts was checked; there was increased absorption of bone trabeculæ and the bones thus became porous and extremely fragile.

Dystrophia Adiposogenitalis.—Weicksel reports a case of this infirmity, the nature of which is still obscure, despite the fact that it is associated with the hypophysis. Before describing this case the author alludes in passing to a second, transitory case, of ordinary obesity conjoined with polyuria insipida. Such a case was at best of doubtful nature. The actual case occurred in a youth of fifteen and one-half years. An older sister is not normal psychically, a fact of some significance. The patient began to flesh up when ten years old and the corpulence has increased steadily from year to year. The progress of the child in school was not what it should have been, but there was no imbecility. Fatigue after slight exertion was pronounced. On inspection the distribution of the fat was seen to be as follows: Breasts, abdominal region, thighs and neck. Thyroid readily recognized. No persistent thymus, no enlarged lymphnodes. Skin dry. Little or no hair in axillæ and pubis. Genitals of infantile character, testicles size of beans. Head unusually small, fundus oculi normal, likewise visual acuity. Reflexes normal, as are other usual tests. Clinically, at least, the case was one of dystrophia adiposogenitalis. It remained to connect the author's case with some abnormality of the hypophysis, such as had been encountered in other cases of dystrophia adiposogenitalis. In the author's case there was no participation of the sella turcica. Hence, at a stroke, a distinction is set up between the latter and the original Frōhlich type. The blood count in the two conditions, however, seems to differ decidedly. Thus in the Frōhlich type this is very simple. The more, however, we depart from this type the greater the diversity of the blood picture —until, indeed, a *reductio ad absurdum* impends. The aim of the author is evidently to awaken interest in the minds of the profession concerning this class of cases.—Muench. med. Woch., June 2, 1914.

Blood Ferments in Pregnancy and Disease.—Prusik and Turna give the results of 121 tests of blood sera with twenty different organs as antigens. The blood serum of pregnant women was tested with placenta in fifty-six cases with fifty-three positive and three negative results; of these three, one reacted positively a second time, one came from a woman five months after a miscarriage, and the third from a woman in the third month of pregnancy; the first two cases were excluded from the results. The results were positive therefore in 94.6 per cent., and after the correction in 98.1 per cent. of the cases. The same placenta tested with the same serum several times always gave the same results.

The sera from four pregnant women with nephritis, catabolized kidney, as did also that from a case of hyperemesis gravidarum. The serum of two cases of eclampsia catabolized the placenta of other cases as well as their own, and among the other organs had the strongest effect on the liver; the kidney tissue was not catabolized. Ten cases of fibromyoma tested with the serum of pregnant patients gave three negative and seven positive results.

The sera of men and non-pregnant women with carcinoma was tested in thirty-one cases; there were positive results in 74 per cent. of the cases with carcinomatous organs and positive results in 63 per cent. of the cases with placenta. The specificity of the reaction was controlled by twenty experiments with serum from males and twenty-two cases that were certainly not preg-

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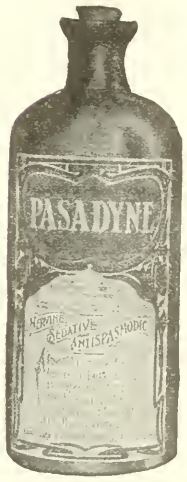
nant; in 43 per cent. of the cases the placenta was catabolized.

In discussing methods the authors point out the importance of medical treatment in the results; after potassium iodide and fibrolysin the sera catabolized various organs. As to the quantity of the reaction, they repeated the tests after twenty-four and forty-eight hours. Dialysis repeated after twenty-four hours (forty cases) showed positive results in 50 to 60 per cent. of the cases that had been positive the first time; after forty-eight hours they were all negative.—Zentralbl. f. Gynäk.

NARCOLEPSY.—The various seizures described under this term differ much among themselves, yet shade into one another by imperceptible gradations. At one extreme is a mere act of "nodding," a momentary absence, which affects children almost exclusively and suggests epileptic petit mal. In certain cases these seizures occur in almost incredible numbers. At the other extreme the subject behaves like one completely exhausted, falling asleep as soon as the attention is fixed by reading or listening, and waking automatically as a result of his constrained attitude which is not suitable for slumber. These subjects usually wake up fully conscious and with no unpleasant feelings. In certain cases sleep seems to be replaced by laughing attacks, which set in during reading or conversation. As a rule, the subjects sleep well at night. At a recent session of the Breslauer psychiatrisch-neurologische Vereinigung the President, C. S. Freund, presented a case of narcolepsy which appeared to show the close connection between the latter and ordinary sleep disorders. As a child the patient was a somniloquist and somnambulist. She could converse intelligently while asleep. As an adult she could read aloud while sleeping. The narcoleptic attacks supervened as a consequence of reading and listening, and under the same conditions she had laughing fits, even, for example, while expressing condolence. The only connection between falling asleep and laughter appeared to be the automatic element. Epilepsy, hysteria, neurasthenia, periodic paralysis, myasthenia, etc., could all be excluded. There were no evidences whatever of mental failure. The patient, whose age was 56, was much older than the average subject of narcolepsy when she first appeared for consultation.—Med. Record.

THE ANTI-NOISE CRUSADE.—The movement for the suppression of avoidable noises, shows signs of reawakening after some years of partial sleep. Perhaps it would be better to say that the great public is being convinced of the damage done by nerve-racking noises and are joining in the crusade. The leaders have not been asleep nor has their enthusiasm diminished. Formerly the plea was always for the sick, as it is a matter of daily experience that in the weakened condition of illness or convalescence, noises are not only painful of themselves but may cause severe headaches lasting many hours afterwards. There seems no dissent from the opinion that recovery may be delayed or even prevented. The quiet zones around hospitals have done great good, and the suppression of noises elsewhere have been a boon to the rest of us, but there is still much more to be done. The movement now hinges on the damage done to healthy people. It has long been an axiom of physiology that nerves cease to react unpleasantly to a stimulus often repeated, and that a noise which at first is exquisitely painful may be tolerated in time. Boiler makers are held up as examples. So we have been in the habit of saying that habitual noise is harmless to the healthy. There are signs of a reversal of this opinion and many medical observers are being quoted to the effect that the ear-piercing noises and rumbles of daily life particularly in railroad travel are not only painful but observably injurious to the nervous system, even when we have become so accustomed to them that we do not notice them. This seems reasonable, for pain is always a signal of injury and when the pain is dulled by repetition the cause still acts. At any rate every noise is new and painful to someone. No matter what the physiology and pathology may be, we are quite sure that the suppression of avoidable noise is an excellent thing. A nuisance should be abated even if we cannot prove it injures health, for it is doubtful whether a nuisance ever is harmless. It is a movement then which the medical profession can and should accelerate —American Medicine.



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MOSQUITO PEST.—This ubiquitous tormentor may be eradicated and malarial fever abolished in most communities. It is only necessary to remember the following facts, and to act accordingly:

1. Salt-water marshes diluted by fresh-water streams breed mosquitoes; kerosene oil will prevent their development.
2. These salt-water mosquitoes do not carry disease.
3. Fresh-water mosquitoes may carry disease (anopheles, malaria; stegomyia, yellow fever).
4. Fresh-water mosquitoes may develop in any little pool of water, in the street, in a back yard, in a tin can, in a pail of stagnant water, in a gutter or drain, and even when water stands in a vessel in a building.
5. Such pools of water being abolished, no mosquitoes can develop.
6. Kerosene, 1 ounce to 15 square feet of water, added from time to time to water that will not readily flow or tends to be stagnant, but cannot be eradicated, will prevent all growth of mosquitoes.
7. Mosquitoes, unless wind-blown, travel only a few hundred yards from their source of breeding.
8. Most disease-breeding mosquitoes are active only at night.
9. Fine mosquito-netting keeps them out of houses.
10. If they have entered a house they can

only be thoroughly eradicated by complete fumigation.

11. If one must go to malarial districts, the prophylactic dose of quinin is from 3 to 5 grains a day of the sulphate.—Jour. A. M. A.

Syphilis and Mortality.—Since tabes and paresis have lost their special designation as parasyphilitic diseases, much has been accomplished in tracing different organic diseases to luetic infection. But even a syphilographer like Hallopeau, for instance, has expressed the belief that syphilis has little influence on mortality; and Renault has taken the same stand.

Blaschko was the first to study the effect of syphilis on mortality. Basing his statement on insurance statistics, he considered four or five years as the average curtailment of life from this cause. Leredde, of Paris, in a recent article, brings strongly confirmatory evidence on this subject. His investigations lead to the belief that in Paris, and presumably in other large cities, three-fourths of all fatal cases of angina pectoris are due to syphilis, while the same factor is active in one-third of the deaths from organic heart disease. The latter proportion applies also to deaths from disease of the nervous system, exclusive of tabes. Chronic nephritis and cirrhosis of the liver are due to syphilis in one-fourth of the cases; and even cancer of the tongue has indirectly the same origin in a large proportion.

Whether arteriosclerosis is due to syphilis is still an open question, but Leredde would class as syphilitic one-half the deaths from atheroma and aneurism. Based on these statistics, an annual toll of 4,000 lives in Paris and 25,000 in the whole of France is due to an infection that Leredde counts second only to tuberculosis in its ravages, more terrible than cancer and more to be feared than alcohol.—Lancet Clinic.

Penile "Menstruation."—Rare cases of apparent menstruation through the penis—escape of blood for two or three days with succeeding leucorrhea—however suggestive of menstruation in the female, cannot be hastily assumed to be a form of hermaphroditism. At a recent meeting of the Verein Deutscher Aerzte in Prague, Lucksche was able to exhibit the genitals, internal and external, of a man who in life, since his eighteenth year had "menstruated" until his death at twenty-five of phthisis. The patient, of male habitus, showed certain secondary sexual characteristics approximating the female type; while some parts of the genitals showed a tendency to atrophy. But every portion of the male genital system was present, while there were no rudimentary female organs. It was decided that such a subject was no hermaphrodite, and that the periodical escape of blood from the urethra could possess nothing in common with menstruation from the uterus. The patient's periodical loss of blood was evidently an independent phenomenon, devoid of any sexual stimulus.—Med. Record.

The Consumptive Away from Home.—Many consumptives seem to be under the impression that the cure of their trouble is a matter of a few weeks only if they can but get away to some congenial climate like that of Asheville, for example; they are likely to leave home with insufficient funds and ultimately to become charges upon the town. Dr. Thompson Frazer, of Asheville, has undertaken to combat this delusion and his plain, unequivocal statement of the facts may be found in Reprint No. 221 from the Public Health Reports for September 18, 1914. Aside from railroad fares, the consumptive patient will have to pay from ten to twelve dollars a week for a comfortable room with board and often an extra dollar for milk and an egg at 10 and 4 o'clock. A good reclining chair costs $15, laundry and other essentials about $2.00, and there still remain sputum cups, thermometer, blankets, and medicines, to say nothing of the services of a physician, of whom only the poorest will care to ask advice free. A minimum of $700 may therefore be counted upon for an arbitrary period of ten months, that is, if the patient is alone. Doctor Frazer, without wishing to discredit the value of climate in the treatment of tuberculosis, points out that it is the least of the factors that make for improvement and is valueless without fresh air, good food, and proper care. If, because of the advice of the attending physician, or because home conditions are unsatisfactory, the patient must leave home, this step should not be taken without a full understanding of the obligations to be met.—N. Y. Med. Jour.

Why Not?—It was a strikingly pertinent question that the little fellow who wanted to get into the open air school room put, when he plaintively queried, "Gee, how sick does a feller have to be before he can get into that fresh air room?"

That little boy has voiced a query that deserves serious consideration. Why open window class rooms for the weaklings only? Why not fresh air rooms for all the children, both sick and well? Is it not a sorry comment on room conditions when we get recruits for the open air classes from the children in the rooms that are supposed to be clean, safe and sanitary in every way? In other words, the question may well be asked, Why not give the well children the same opportunities to get their rightful share of fresh, life-giving air that are provided for those whose already weakened physical condition makes it impossible for them to live and carry on their studies under the usual schoolroom surroundings?

Finally, should this little boy, or any little girl or boy be forced to get sick before they can have provided for them the conditions that make for bodily health and vigor and which will also tend to keep them well all the time?—Bull. Chicago Bd. of Health.

What's In A Name?—"A large, gray stone building stands in a garden plot, its red tiled roof and striped awnings giving a sense of alertness and vivacity. Under its spreading trees on benches and on the cool green lawn sit groups of aged men and women with here and there a younger one in a rolling chair or reclining seat. The observer passing by stops to smile at the serenity and peace of the scene. And then as he passes the door there blazens up before him in glaring letters the words 'Home for Incurables.' Mingled with his feeling of pity there comes something of shock. Some institutions—why not all?—are called by noncommittal and inviting names like 'Rest Haven,' 'Placid Retreat,' and 'Shadow Lawns.' To its inmates and even to visitors," says The Journal of the American Medical Association, "the hospital, home or sanatorium will be more pleasant under a more attractive title suggesting rest and quietude."

Leucocytosis.—In a febrile case with difficulty in the diagnosis the presence of a leucocytosis points to pneumonia and away from influenza or typhoid fever.—Hospital.

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ANGINA PECTORIS

By Beverley Robinson, M.D., of New York

IN looking back over a long and large experience, I find I have only infrequently met with cases of angina pectoris. At least, this is my judgment when I consider the typical descriptions as given by authors. On the other hand, pain in and around the heart of a more or less severe character, is not uncommon. Sometimes, the pain is explained obviously by pronounced heart disease. Again, when no cardiac trouble of organic nature is present, the pain is explained by an existing gouty condition, by malaria, or syphilis.

Further, the patient may be suffering from nervous disorder of some sort, such as neuralgia, hysteria, or neurasthenia. Or there may be some remote disease, and the pain in and around the heart, seemingly is of reflex origin.

To return, however, to the instances in which the anginal attack is typical, where there is the impression of imminent death—the pallor, cold sweats, dread of the countenance, where no movements occur and where dyspnea is not present, where the agonizing retrosternal pain, radiating to the left arm and fingers, exists: These are the cases we diagnose as due to sclerosed coronary arteries. If death occurs, as it does sooner or later, and an autopsy is obtained, this lesion will be discovered as a rule, even though other pathological conditions may also be present. Admitting my statement as true, it is clear we should endeavor specially, to combat this structural change. Unfortunately we have no drugs at present, which are really remedial. The iodides, theoretically the best, have often been tried, but only with rarely beneficial results. We are usually obliged to have recourse to the nitrites and merely for temporary good effects. Nitrite of amyl will frequently cut short the attacks, when inhaled, but its influence is, at best, very evanescent. Aside from this drug, we have no remedy as to its very rapid action so useful as chloroform. According to some writers, notably George William Balfour, the most prominent, chloroform is also curative. Opposed to him, however, is Anstie who proclaims that the inhalation of chloroform means sure death. Balfour's method of inhalation is to pour half a dram of chloroform on a sponge in the bottom of a wide-neck bottle and inhale vigorously.

When consciousness is lost, the bottle falls from the hand immediately, and there is no further danger from it.

Personally, I have never been willing to make use of chloroform, but I have tried with little good effect, the quite liberal employment of spirits of chloroform, inhaled from a handkerchief. The better treatment of an attack after the preliminary use of nitrite of amyl by inhalation from a vial, or from a crushed glass pearl containing 3 to 5 drops of amyl, is immediately to inject morphine ¼ grn. and atropine 1/100 grn. subcutaneously. When this is done, one or two tablets of nitroglycerin, each containing 1/100 grn., should be given by the mouth, with or without a swallow of water. The duration of the attack must always be considered from the viewpoints both of prognosis and treatment. It may be but a few moments, and either temporary recovery takes place, or death results. What is more usual is that the attack lasts many minutes. It may be, ten, twenty, thirty, or longer. In these instances, we may, of course, be able to

see good effects of the hypodermic injection and also, of the tablets of nitroglycerin. In some cases where the attacks have recurred with increased frequency and even augmented severity, the morphine habit is acquired and the doses of the drug progressively added to and used as a supposed preventive, as well as a curative agent. In one patient I have in mind, owing to a strong will and purpose, the habit was broken up and then frequent and increasing doses of nitroglycerin were taken, not to cure, but to lessen the agony of the attacks and also to shorten them. I have tried many drugs and combinations of them, and until the present time, have been unable to find anyone which has proven evidently curative. In those instances where the diagnosis has been doubtful and where I have found a weak, dilated heart, or dyspeptic conditions dependent upon a wrong dietary, I have surely been of service by means of appropriate medication and careful, judicious selection of food and good, simple cooking. The one remedy I have never tried, and which promises most success, if we may credit one who like Von Neusser,[1] has made a profound and admirable study of this disease, is frequent small doses of quinine, "administered for some length of time" (page 70)—surely in a disease which is reported to have been fatal to many distinguished men, among whom we must sadly number of our own noblest and best (Hunter, Da Costa, Pepper, and others)—no remedy should be ignored which inspires legitimate hope of being helpful. From actual experience also, both Balfour and Anstie agree in regard to the preventive efficacy against attacks of angina, of the proper use of arsenic.

Balfour gives one milligramme of arsenious acid daily, or three or more minims of Fowler's solution of arsenic, three times daily. A larger amount of arsenious acid has proved prejudicial in his experience. Many other writers speak of arsenic as a remedy to be administered, but do not specially laud its value in the treatment of angina pectoris. The theobromine preparations, it is stated, not only improve the heart action, but probably also have a vaso-dilating effect in the area of the cardiac arteries (Von Neusser).

In view of the writing of Pettey[2] in regard to the action and effects of sparteine as one of the best heart tonics and vaso-dilators, I have lately advised its use in doses of ¼ grn. repeated every three or four hours, in a case of probable angina pectoris, which was under my care as consultant, during the past winter.

[1] Angina Pectoris, Treat & Co., 1909. Translated by Dr. A. MacFarlane.

[2] Paper read before the Tri-State Medical Society of Alabama, Georgia and Tennessee, Chatanooga, Tenn., Sept. 25-28, 1905.

A STUDY OF 150 CASES OF TWILIGHT SLEEP*

By Jacob Heller, M.D., of Brooklyn, N. Y.

In considering any measure for the relief of pain incident to childbirth, two things have to be proven: (1) That the measure actually does relieve the pain, and (2) that it is free from danger to life and health of mother or child.

That opium and its derivatives, and scopolamine and the whole group to which it belongs, possesses, in varying degrees, the power so to lower the sensitiveness of the nervous system as to diminish pain or abolish it, has long been an established fact, but that they can be used in combination in such manner as to rob childbirth of its terrors and render it painless or almost so, without interfering with its normal termination was first described by Steinbuchel in 1902.

It was, however, Gauss of Krönig's Klinic in Freiburg, who brought the use of scopolamine-morphine anesthesia in labor prominently before the world. It was also Gauss who gave it the convenient and very descriptive name of "Dämmerschlaf," or as we call it, "twilight sleep." His first article on the subject, which appeared in 1906 and contained a report of five hundred (500) labors in which twilight sleep was used with relief of pain and perfect safety to mother and child, created intense interest in the subject among medical men, and for a considerable time after numerous reports on the subject appeared in medical literature. Some of the writers, chief among whom were Krönig, Zweifel, Beiruti and Newell, confirmed the observations of Gauss as to its efficacy and safety. Others, particularly Hocheisen, not only denied any great benefit to it, but condemned it as unsafe and dangerous to mother and child.

As has so often been the case, however, in medical research and investigation, the adverse reports were readily accepted as final, with the result that interest in the subject subsided, and, with the exception of Freiburg, where it was adopted as a routine measure, the method was not tried anywhere to any great extent and with any degree of thoroughness.

In May of this year there appeared in a New York lay magazine a sensational

* Medical Record, Nov. 7, 1914.

article on twilight sleep which brought down upon itself the just criticism of the medical press, but which, however, served the good purpose of reawakening a general interest in the question. It was then that the medical staff of the Jewish Maternity Hospital decided to give the method another and thorough trial if possible. We say another and thorough, advisedly, for only an indifferent attempt had been previously made and abandoned for no apparent reason. We were fortunate in having been able to obtain the cooperation of Dr. Kurt E. Schlössingk, a coworker of Kronig and Gauss, who was thoroughly familiar with the Freiburg technique, mode of administration, indications, and contraindications, points so much emphasized by Gauss as essential to the successful application of this method.

Our report is based on the experience obtained in 150 cases drawn from the charity and private service of the Jewish Maternity Hospital.

No case was excluded except for one of the following reasons: (1) A marked disproportion between the fetal head and pelvis, requiring in the opinion of those attending, a major obstetric operation. (2) Placenta previa. (3) Absent or doubtful fetal heart sounds. (4) The woman being too far in labor. The last class was excluded for obvious reasons; the first three, because we did not want any accident to mother or child, under such circumstances, to be attributed to the twilight sleep. All minor degrees of pelvic contractions were included, where it was thought labor could be terminated by forceps. So also were included in this series two cases of nephritis with threatened eclampsia, one of which culminated in convulsions six hours after delivery and made a rapid and uneventful recovery, as well as two cases of chronic endocarditis. These two latter were particularly gratifying, going through their labor without any shock or strain on their hearts. It seems to us that twilight sleep is exceptionally useful in this complication.

Of the series one hundred and thirteen (113) were primiparæ and thirty seven (37) multiparæ; one hundred and forty-eight (148) presented the vertex and two the breach. Of the vertex presentations there were the usual number of positions, thus, 103 were L.O.A., 27 R.O.P., 16 R.O.A. and 2 L.O.P.

Mode of Delivery.—Of the total of 150, 131 delivered themselves spontaneously with the ordinary support of the perineum, and 19 were artificially terminated. One by breach extraction and 18 by forceps, 3 of which were medium and 15 low. With a little more patience on the part of the attending the number of forceps deliveries could have been reduced to six, for in only six of the cases was there any indication for immediate delivery. The others were done for the convenience of the attending. Krönig lays great stress on the fact that twilight sleep reduces the percentage of forceps deliveries, for the reason that with the pain and the consequent exhaustion removed, there is no risk to let the patient take a longer time to deliver herself.

Separation of Placenta and Bleeding.—"What effect has the method on the separation of the placenta and bleeding?" is one of the questions most frequently asked. For, with absence or diminution of subjective pain, it is difficult, for one who has not watched these cases, to conceive of a well contracted uterus. In our whole series we did not meet a single instance where the placenta was retained for longer than thirty minutes, and the average time for its expulsion was about twenty minutes. Nor did we meet a single case in which bleeding was abnormally profuse. In fact, a hemorrhage which might have been expected in 150 labors was here conspicuous by its absence.

Duration of Labors.—With very few exceptions, all writers on the subject agree that labor is moderately prolonged by twilight sleep. Siegel, of Freiburg, states that in their experience there is a delay of about one hour for the first stage and thirty-three minutes for the second. Our figures on this phase are rather inconclusive and, if anything, would show a shortening of labor, for the average duration of labor in the primiparæ of the series was only 8½ hours, obviously too short. The reason for this apparent shortening is the fact that the great majority of our patients are admitted in a fairly advanced state of cervical dilatation, and our records take the time of their admission to the hospital as the time of the onset of labor. Personally, from observations made on a small number of cases that were admitted, that were not in labor, I believe the first stage is actually somewhat shortened, and I attribute that to the softening effect, morphine-narcotine meconate[1] and scopolamine have on the cervix and lower uterine segment. The second stage, however, is positively delayed. The patient being in a semi-conscious state cannot be taught to utilize her abdominal muscles to advantage, since the contractions of the abdominal muscles are entirely of voluntary origin.

[1] Morphine-narcotine meconate is marketed under the name Narcophin.—Ed. M. A.

Condition of the Mother During Labor and the Puerperium.—Half an hour after the first injection the patient usually becomes flushed. The pupils are dilated and the lips parched. She is somewhat drowsy and her pains markedly diminished. With the second dose her sleep deepens and the uterine contractions are evidenced by a slightly painful expression on her face or by very weak attempt at crying. Her memory, however, is still not much impaired. It is not until after the third injection that her memory is entirely lost. She then fails to remember any object previously shown her or the number of injections given, although she will answer questions quite readily on anything that does not tax her memory. This state continues until the birth of the child, when she falls in a quiet and natural sleep lasting in our patients about three hours. She awakens rested and cheerful, free from any shock or sign of exhaustion, no matter how long the labor lasted. Often the patient asks of the nurse when she will be through with her confinement, and it has been hard to convince her that she is already through without showing her child to her and inviting her to feel her reduced abdomen. The rest of the puerperium was perfectly smooth and normal, so much so that patients were with difficulty kept in bed and many were permitted to get out on the second or third day.

The most troublesome thing encountered by us was occasional restlessness. Particularly was such the case at the beginning of our work when we were rather timid and felt our way slowly, being uncertain of the dosage and the intervals. With gained experience and confidence in the method we were able to eliminate much of the restlessness, and the latter was only rarely evidenced by the patient's moving about in bed and upsetting her aseptic surroundings.

Effect on the Child.—The harmful effects of opium and the belladonna group on infants and children being known, apprehension for the twilight child is justified. Many prospective mothers, as well as many physicians, ask the question: "Does twilight sleep have any ill effect on the child?" Of the 152 children (two of the births being twins) not one was born still, that is, failed of resuscitation. Three of the children died within a short time after birth. One, in the eighth month of gestation, with a spina bifida, died three hours after birth; a second died three days later from melena neonatorum with a family history of bleeders, and the third one apparently from subdural hemorrhage. We could obtain no post-mortem to verify our assumption and so this death remains doubtful. But even if we should credit it to twilight sleep, the child mortality would be 0.6 of one per cent., comparing more than favorably with the ordinary fetal mortality of 1.5 per cent. The fetal heart *in utero*, which was always watched with the greatest care, never went up above 160 or fell below 120 per minute. One hundred and twenty of the children cried out immediately and spontaneously. In 29 there was an average delay of five minutes, and in only one case, where, owing to great restlessness of the mother, we were compelled to repeat the morphine-narcotine meconate three times, was there a delay of 20 minutes, requiring artificial respiration. This child did not do well for a week; was rather drowsy, did not take the breast, and cried but weakly. It finally, however, made a good recovery. The comparative freedom of the child from the effects of drugs, which so overwhelm the mother, can be explained only by the selective powers of the placenta preventing the greatest part of the drug from reaching the fetal circulation.

Technique.—We followed the technique practiced at Freiburg without deviation. When it was determined by the effect of the uterine contractions on the cervix and membranes, that the patient was in active labor, she was removed to a dimly lighted room away from the general noise of the hospital. She was placed in a bed prepared for delivery. After her pulse and respiration, the fetal heart, as well as the frequency and duration of the uterine contractions, were observed and noted down on record, she was given an initial injection of 1 Cc. of a 3 per cent. solution of morphine-narcotine meconate (narcophin), which is equal to half a grain of the powdered drug. Through the same needle and without removing it, she was injected with 1.5 Cc. of a 3:1000 of 1 per cent. solution of scopolamine hydrobromide, equivalent to 1/133 of a grain. One hour later a second injection of scopolamine alone, one-third of the original dose, that is, one-half Cc. of the same solution was given. Half an hour after the second injection the memory test was applied; the patient was asked whether she remembered having seen a certain object previously shown her or the number of injections given her. If her answer was ready and clear she was given another half Cc. of scopolamine at once, if not, we waited with the third injection for the hour. She was then constantly watched, and the injection of 0.5 Cc. of scopolamine repeated on the slightest sign of reappearance of memory until she was delivered. On an

average the injection had to be repeated every one and one-half hours. The greatest number of injections given to any one patient was 19, the smallest, 1; the average, 5. The longest time a patient was in twilight sleep was 25½ hours; the shortest, 45 minutes; the average, 6½ hours. In only a few instances, owing to restlessness of the mother, did we repeat the morphine-narcotine meconate also. Pituitrin we used rather frequently, a little more often than ordinarily. With the birth of the child the cord was rapidly clamped and the child removed whenever that could be accomplished before it cried, so as not to awaken the mother.

Results.—In 122 cases, or 81.3 per cent., we succeeded in obtaining a complete amnesia and an almost equal degree of analgesia. All that occurred during the time the patient was under the influence of the drugs, was wiped out of her memory. In 13, or 8.7 per cent., we got analgesia without amnesia. These were started somewhat too late. Gauss thinks that the ideal case is one in which amnesia is complete. In our opinion, amnesia, while present in the great majority of cases, is not essential. The analgesia case without amnesia seems to us the more ideal, for not only does that labor appear more natural, but the patient can make good use of her abdominal muscles to shorten the duration of her labor.

In 15 cases, or in 10 per cent., we failed to obtain any marked results. With our present experience it is quite possible to reduce the number of failures to a smaller figure, but since the sensitiveness of the nervous system varies in different individuals, as does the susceptibility to drugs, there will always be some cases that will not be influenced by the drugs unless carried beyond the point of safety.

Our small series, then, proves that judiciously used, and with proper precaution, the method is capable of relieving pain in 90 per cent. of cases and that it is free from any danger to life or health of mother or child.

Let me say a word about the objection raised against any attempt to relieve childbirth of pain and suffering. It is argued that since nature that encourages propagation in every possible way and manner, could not have been so cruel and inconsistent as to inflict untold suffering on half of the human race, or perhaps on half of living creation, and thus handicap her own work, if she had no distinct purpose in that pain and suffering; and that any interference with that purpose will be resented by her in some manner. Krönig tries to meet that argument by stating that a very great number of our present-day women to whom twilight sleep is particularly beneficial, are so far removed from nature as to make their labor border on the pathological, and therefore, he says, interference is not only justified but clearly indicated.

In our opinion, subjective pain incident to childbirth serves no purpose in nature but is rather an unnecessary result of an unchangeable natural law, that all severe muscular effort is accompanied by pain. The metabolic end-products of muscular activity are irritating to the nerve ends, causing pain. Thus, we see fatigue following an immoderate bodily exertion, severe pain accompanying the hurried muscular peristalsis of the bowel in ridding the system of injurious material; excruciating colic caused by the expulsion of a biliary or renal calculus, and finally agonizing pain incident to the expulsion of the fetus from the uterus, and in trying to relieve this pain we are not in conflict with a natural purpose, but with an unnecessary and undesirable result of a natural law.

1199 Eastern Parkway.

SPINAL ANESTHESIA*

By John Overton, M.D., and L. E. Burch, M.D., of Nashville, Tenn.

We wish to bring this subject to your attention, not because it is a procedure not generally used, but because we believe it is one that has a distinct field of usefulness in properly selected cases. It might be interesting for us to give a brief survey of its history. In 1885, Corning, of New York, first used cocaine injections in proximity to the dura around the spinal cord in the lumbar region. Later he used injections within the dura for the relief of irritable conditions of the cord. In 1898, Bier, of Berlin, first attempted its use for the purpose of producing anesthesia for surgical reasons. Bier was careful in his work and warned against too widespread adoption of this method. It, however, was taken up promptly by a number of surgeons probably with too little appreciation of its danger and the limitations of its adaptability. Unfortunately, there were a number of fatalities and permanent unpleasant sequelæ. This, of course, discredited spinal anesthesia and it was generally given up. Fortunately, there were a small number of men who felt that it had distinct advantages and that with proper care in selecting cases and improved skill and technique it would take its place as a safe method. There were a number of these

*Southern Practitioner, Oct., 1914.

men, prominent among whom were Bier, of Berlin; Tuffier, of France; Barker, of England; Morton, Babcock and Bainbridge of this country. Among the first cases cocaine was the drug used, but there were so many unpleasant symptoms to develop that it was rapidly displaced by a more safe drug, particularly stovaine, tropacocaine and novocaine.

The method as generally used was lumbar anesthesia, but Jonnesco, of Budapest, used stovaine in combination with strychnine and injected at any point in the spinal canal. He has a large series of cases, and is very enthusiastic in his work. However, few, up to the present time, have been convinced of its safety or have the courage to follow him. A safe rule to follow in selecting cases for this method is to advise it only in those in which a general anesthesia is positively contra-indicated and in which a local anesthetic would not be sufficient. It is advised to use it in severe cardiac, pulmonary and renal disease; in the old, and in the weak, exhausted cases, or in cases where we anticipate a very severe and long operation. It is especially adapted to prostatectomy in old men, pan-hysterectomy for carcinoma, in operations on the external genitals, rectum and lower extremities, in diabetics, and in cases of acute peritoneal sepsis and paralytic ileus. It is contraindicated in cases of myocardial disease, especially associated with obesity; in advanced arterio-sclerosis where we have reason to believe that the cerebral vessels are particularly affected; in cases of acute hemorrhage and shock with lowered blood pressure. The majority of observers feel that it should not be used in the very young; that is, under twelve or fifteen years. It should not be attempted where we have any anomaly of the spine, in acute lues or other cerebro-spinal disease. Of course, all agree that it should not be used where there is any inflammatory or septic process at a point near where we would have to make the puncture. It is also believed by most men that in cases of sepsis of unknown origin or a pyemic condition it is dangerous to use it, because of the possibility of inviting infection within the spinal canal following the unavoidable trauma and irritation produced by the puncture and injection of the foreign material. In nervous patients and in those who have an aversion for it we should never urge its use.

As Dr. Keen, of Philadelphia, says, the ideal anesthetic is one that will abolish pain by the abolishment of consciousness, but without danger to life. To this no one will take exception. Spinal anesthesia cannot entirely supplant general narcosis, but it is believed by Babcock as well as others, that in cases requiring operation below the diaphragm and cared for by those skilled in this work, that spinal anesthesia is equally as safe as a prolonged general narcosis where we need complete relaxation; but not as safe as a light transient anesthetic. Babcock also believes that there are fewer sequelæ following spinal anesthesia than general anesthesia. It has a number of disadvantages, among which are: that it is not applicable to all cases, that it fails in a small percentage of cases, that the dose cannot be diminished after once given, and that only those who have specially prepared themselves and developed a perfect technique should undertake it. Any one without proper training or thorough appreciation of every danger, immediate or remote, should avoid its use. According to statistics, the percentage of deaths is higher than in the use of chloroform or ether. One man collected a series of twenty-two thousand cases with forty-six deaths. This, of course, includes many cases when this method was in its infancy, as well as many difficult cases whose termination could in no way be attributed to the anesthesia used. Still we must realize the possibility of death from respiratory paralysis, as well as temporary permanent disabilities from paralyses of various groups of muscles. Symptoms of collapse may arise during anesthesia, such as air hunger, faintness, disturbed vision, weak, rapid pulse, free perspiration, nausea and vomiting. It may be followed by symptoms of meningism, sleeplessness and various paresthesias, backache, acute decubitus and gangrene, transient nephritis, a chronic neurasthenic state and prolonged, stubborn headache. For the latter ergot is advised. Few cases have elevation of temperature, which is thought by some to be due to irritation of the heat center. There may be a complete relaxation of the sphincter or there may be retention of urine.

The treatment of collapse is to raise the head and shoulders, give stimulation by strychnine, caffeine, oxygen, saline transfusion and pressure on the abdomen. If symptoms of respiratory paralysis develop we should institute artificial respiration and keep it up until the heart action improves. Of course, the best treatment would be to closely observe the height to which anesthesia reaches; and to raise the head and shoulders, should it go as high as the clavicle or involve the arms. To prevent the sequelæ we should use preparations that are fresh and prepared according to strict instructions. By these means we will avoid much inconvenience and anxiety

to ourselves and best guard the safety and permanent health of our patients.

Technique.—At present stovaine, tropacocaine and novocaine are the drugs used. From evidence obtainable through reading it appears that tropacocaine is the safest. Stovaine, however, has been used in a very large series of cases by Babcock, of this country, and Barker of England. These drugs may be used alone or in combination with suprarenal preparations. There is a disagreement, however, in reference to this point. Some think that it better localizes the effect of the anesthetic as well as enhances it. Others believe that it is unsafe to use it, because of the unstable nature of the suprarenal preparations and the consequent danger of injury to the nerves with resultant paralysis or trophic disturbance with the decubitus.

All the drugs are susceptible to sterilization by heating. This should, however, not be too prolonged. Stovaine has in itself positive antiseptic properties. They are all used in 5 per cent. solutions, the dose being from five to seven one hundredth of a gram. Some use a solution lighter than the spinal fluid, some of the same specific gravity and some heavier. Some inject immediately following puncture, others prefer to allow the escape of 5 to 10 Cc. of spinal fluid and then inject; others dilute the solution with the spinal fluid and return it all to the canal. It is claimed by Babcock that the anesthetic affects the nerve roots and not the spinal cord. It takes place by a chemical affinity between the nerve substance and the anesthetic drug. The majority put the patient in a sitting position with legs hanging over the table and back well fixed, and since the cord ends at a level with the second lumbar vertebra make the puncture between the second and third or the third and fourth, the latter being the safer, since the cord may possibly be lower than normal. The puncture may be made either directly in the median line or a little to the side, the needle in each case pointing slightly upward and toward the median line. It is well to use only a needle of the Quincke style and to withdraw the stilette before entering the subarachnoid sack, and do not attach the syringe until the fluid flows out freely. These precautions are taken, first, with the idea of puncturing the sack directly in the median line, so as not to get into either group of nerve fibers; nor to penetrate too far forward where the motor roots lie and might therefore be more affected; and lastly, be sure the needle is well within the sack so that the solution would not be injected extradurally. The patient is allowed to remain sitting for three minutes, then is slowly put in the recumbent position with head and shoulders slightly elevated. It is generally considered unwise to elevate the pelvis too quickly. However, after fifteen minutes the Trendelenburg position may be used.

Barker uses a technique different from most of the others. He claims that by using a solution distinctly heavier than the spinal fluid we can definitely control the height of the anesthesia by changing the elevation of the shoulders and pelvis with the patient lying in the lateral position. He takes care that this level is not disturbed on changing into the recumbent position. He uses stovaine with the addition of a little glucose, which has a specific gravity of 1.02, the spinal fluid varying from 1.003 to 1.007. It is also possible by this procedure to anesthetize only one limb. As a rule, a properly performed lumbar anesthesia is sufficient in the class of cases indicated. If not complete, it may be repeated, unless the full dose has already been given, or we may proceed with the assistance of a small amount of ether, one to two drams will frequently be enough for a long operation. Others like to use the morphine-scopolamine combination. All instruments should be kept only for this purpose and sterilized either with steam or boiled in distilled water, as an addition of alkalies or strong antiseptics may neutralize the effect of the anesthetic or produce irritation within the canal. We may prepare the solution fresh or use already standardized ampules or tablets of definite amounts. The technique we have used is as follows, and is practically that of Gellhorn, of St. Louis:

The patient is given the same general and local preparation as for any operation, but may be allowed to take food within a short time of going to the operating room. Is put on the table in sitting position with legs hanging over and puncture is made between the third and fourth lumbar vertebræ. As soon as the fluid flows freely, the syringe, already filled, is attached and as much spinal fluid drawn in as we had of solution; we generally use 3 Cc. of a 5-per-cent. novocaine solution, but I believe we may safely use it in as strong as a 10 per cent. solution. After remaining in the upright position for three minutes, the patient is gradually lowered to the recumbent posture with head and shoulders slightly elevated. In ten minutes preparation may be carried out and in fifteen the operation may be begun. The anesthesia usually lasts from one to two hours. After return to room patient should be kept recumbent and watched closely for the first few hours.

They frequently are in the humor to joke and may very soon be allowed food. The early convalescence very favorably contrasts with that of cases following a general narcosis.

Recently we have done eight cases by this method. First: A man seventy-eight years old, with stone in bladder. Second: Ureteral catherization in case of tubercular cystitis. Third: A woman with dermoid cyst of long standing and very much run down. Fourth: A case of dilatation, curettage, amputation of cervix, perineorrhaphy and hemorrhoids. Fifth: Dilatation, curettage, perineorrhaphy and ventro-suspension. Sixth: Nephrectomy for tuberculosis of kidney. Seventh: Dilatation, currettage, appendectomy, oophorectomy and ventro-suspension. Eighth: A man, seventy-five years of age, with enlarged prostate and three very large stones. The anesthesia was good in all, but in the cases where the peritoneum was opened, the patients experienced some slight pain and nausea. In two there was a tendency for the bowels to protrude, in one the relaxation was unusually good. With the exception of two cases, the subjects were exceedingly bad, but no alarming symptoms developed in any.

PILOCARPINE IN HIGH BLOOD PRESSURE*

By William Duffield Robinson, M.D., of Philadelphia

Just what the official account[1] of pilocarpine ought to include is not clear, but certainly the first named of the two species is a very inferior drug, and its recognition is excusable only on the ground that the market is often devoid of anything better. The leaflets yield four alkaloids, constituting about 0.5 per cent. of their weight, pilocarpine, isopilocarpine, pilocarpidine, and jaborine.

Pilocarpine is the dominant alkaloid and is official, together with its salt the hydrochloride. The alkaloid jaborine differs from the others in its action, in that it resembles atropine; while the researches of Bastedo conclusively prove that the action of pilocarpine on the end of the secretory nerves is directly antagonistic to atropine, as well as its action on the nerves governing smooth muscle, the termination of the vagus, and the third nerve in the internal eye.

When applied locally in strong solution, it stimulates to a small degree the gland and muscle cells. It does not affect, however, the sensory nerve endings or the striated muscles or their motor end plates. In common with atropine, pilocarpine acts after nerve degeneration, and it is presumed that it affects a material which serves as a receptor of nerve impulses, most likely a colloid. For practical purposes we can omit the reference to the receptor, and say that it acts on the nerve endings.

In full physiological doses, pilocarpine is a powerful diaphoretic, causing a copious flow of sweat, containing an increase of solids. The reaction of the sweat is at first acid, then neutral, and later alkaline; the early acidity is probably due to the admixture of waste products from the sebaceous follicles. If the nerves between the ganglia and the sweat glands are cut, the action of the drug is not inhibited, so so that its action must be on the nerve ends in the sweat glands or on the gland cells.

Pilocarpine is the antagonist of atropine; it stimulates those tissues which atropine depresses; in the presence of pilocarpine a much increased dose of atropine is required to produce its physiological action.

The action of pilocarpine is to stimulate all secretions, with the possible exception of that of the mammary gland. In the liver the production of sugar is increased, but not that of bile. The secretions most affected are those of the skin, the salivary glands, and the pancreas, but those of the eyes, ears, and stomach, with the intestines, all share very markedly in the result. There is hyperemia of the tissues, whose activities are increased owing to the direct stimulating effect on the nerve endings in the gland or of the gland cells.

The marked pupillary contraction is due to stimulation of the nerve endings of the third nerve. The vessel walls are not affected, and there is no increase of vessel tension. The terminal filaments of the vagus in the heart are stimulated and the heart action is slowed, the cardiac muscle is directly depressed by full physiological doses. The digestive processes are stimulated by the increased activity of the pancreas, intestinal fermentation is thus lessened, and toxemia, the strong factor in arterial hypertension, is decreased.

The action of pilocarpine on the skin, stimulating both the sebaceous and the sweat glands, its very beneficial action on the hair follicles, increasing the strength, lustre, and quantity; its stimulating influence on the growth of the nails, suggest a broad field for its employment more gener-

* Read before the American Climatological and Clinical Assn., N. Y. Med. Jour., Nov. 7, 1914.

[1] The leaflets of Pilocarpus jaborandi, Holmes, or of Pilocarpus microphyllus, Stapf (Fam. *Rutaceæ*), yielding, when assayed by the process given below, not less than 0.5 per cent. of alkaloids. U. S. P.

ally in cutaneous disease. To the kidneys (when used in small doses, 1/30 grn. three times daily) it is a direct stimulant; the use by inunction of an ointment, containing pilocarpine, ten grains, wool fat, one ounce, rubbed well into the loins, has a favorable action in acute suppression of urine. Its beneficial action on the kidney is best noted when given in small doses, as full doses are likely to produce free sweating and nausea. The drug is eliminated by the skin, kidneys and salivary glands. Dangerous amounts of bronchial secretion may be induced by pilocarpine, if given in full doses. By some it is stated that the sugar in the milk and blood is increased. Locally applied, it brings about its physiological results, and it has been stated by some observers that the hair growth is stimulated by it. It contracts the pupil after topical ingestion, by stimulating the third nerve endings.

The foregoing is a fair composite of the recorded observations of the effects of pilocarpine by the writers of the past decades. It shows that not a few persons respond abnormally to the foregoing action, when pilocarpine has been administered. It generally, but not nearly always, slows the pulse rate when given in moderate doses. The pulse rate and blood pressure are both harmoniously reduced in the lower animals, but not always harmoniously so in human beings. The negro race is very susceptible to pilocarpine, and a very much smaller dose is toxic to them than to whites. A number of deaths from lack of knowledge of this fact have been reported. The late Dr. Rowland G. Curtin was probably the first to call attention to this peculiarity of the alkaloid, and he always advised his interns not to administer it to negroes as a diaphoretic, especially in the usual doses used in uremia and in acute or late chronic nephritis.

For the past several years the writer has used pilocarpine in practically all cases of hypertension of blood-vessels without marked cardiac hypertrophy, and with very gratifying results in nearly all instances. Its use gave evidence of modifying the cause of hypertension. The dose, of course, was a fraction of that usually taught as the normal dose. The records of heart action and blood pressure change were always closely watched, as was also any effect on sensible sweat.

The starting dose for adults in fair condition was 1/30 grn. in a glassful of water after meals. This occasionally had to be still further reduced and seldom increased, to secure a gradual decrease in blood pressure amounting to about 30 to 40 Mm. Hg. after four to six weeks of administration. In one case, an idiosyncrasy seemed to exist, so that the dose had to be reduced to 1/100 grn., well diluted, after meals. The relief it produced of distressing symptoms characteristic of high pressure in this case, was most gratifying. The benefits derived from its use in cases of hypertension where apoplexy had previously occurred, has been uniformly good, in fact better than by any other former treatment, including magnetism and high frequency electric currents at the hands of experts.

S. W. Saunden says that pilocarpine causes rapid improvements in oral and faucial mucous membranes and prevents glandular infection in scarlet fever. Pilocarpine in membranous tonsillitis is of material curative aid. Pilocarpine increases the secretion of digestive juices without disturbing the proportion of hydrochloric acid. Graeme M. Hammond has reported fifteen cases of Menière's disease cured by pilocarpine. Posey (Transactions of the American Ophthalmological Society, 1908) said that pilocarpine was more appropriate than eserine for the local preliminary treatment by miotics in glaucoma. The pruritus of senility is often most satisfactorily treated by nightly doses by pilocarpine. Ocular tension is markedly reduced by local use of a 2 per cent. solution. It is more effective than atropine 1 per cent., cocaine 10 per cent., novocaine 2 per cent.

Cheron says it acts as a galactagogue. Walowske recommends it as good for catarrhal jaundice. Ringer states that children are less susceptible to it, even in large doses, than adults. Schwann states that it greatly increases intestinal peristalsis in lower animals. Aural vertigo, or disease of the eighth nerve, is often best relieved by pilocarpine. Pilocarpine causes leucocytosis.

Hypertension in nephritis is due to retention of waste products. Headache is relieved by reduction of pressure, by increasing excretion and secretion. The causes of hypertension should be clearly worked out before any course of treatment is decided on. When the thoracic aorta and splanchnics are sclerotic, the hypertension is likely compensatory, and so reduction of pressure, other than by methods directed toward correcting the original cause of a general sclerosis, will be contraindicated.

The intense continuous tension of life as it is lived to-day reacts on the nervous system in such a way as seriously to disarrange the functions of the body organs,

especially by reduction of normal nerve impulse, to the glandular system. So metabolism, elimination, and the condition of the secretions are made constantly abnormal. Vitiated structural change must be the history following such a prolonged abnormal life record.

Chronic interstitial nephritis is practically always interlinked with arteriosclerosis and gives the highest blood pressure showing we meet. This condition of things would be quite impossible, except for impaired nerve force and sustaining power, and the presence of irritating, abnormal, chemical, and bacterial substances long present in the blood stream, and therefore constantly presented to the kidneys for elimination. The hypertension in all such cases is an effort toward compensation by so intensifying the stimulation of the kidney that poisons may be eliminated. Uremia and eclampsia are examples. In pneumonia, typhoid fever, and the like, the toxemia becomes so great as to pass beyond stimulation.

Dr. Samuel West in "Index of Treatment," by various authors, 1912, states it as his observation that, "of all drugs for chronic renal disease, I think pilocarpine the most useful. I cannot understand the prejudice that seems to exist against it in some quarters. I have used it very largely and have never seen any disadvantage follow its administration, on the contrary nothing but good. Apart from its general action, many of the symptoms are distinctly controlled by it. Thus headache and the exhaustions and restlessness so common in the later stages of the disease may be relieved by pilocarpine more immediately and persistently than by any other means, and even threatened uremia staved off. I consider it the most useful remedy of all." Pilocarpine increases the activity of probably all glandular tissue of the body, and in general arteriosclerosis, the blood supply to these glands is necessarily reduced. Pilocarpine acts as a vasomotor dilator, and so tends to the reestablishment of normal functions in normal amounts.

The reverse of depression in properly adjusted doses of pilocarpine to respective cases occurs, yet it does not stimulate as stimulation is usually understood, but simply introduces an additional entity to the media, deciding normal glandular functions, which enables such functions to be performed under the existing inability to do so. So probably is the maintenance of normal metabolism assisted with its necessary influence on blood pressure.

Better metabolic action throughout the body ensues, and to such extent a return of approach to health during its action results. Excretion and secretion are markedly increased. Particularly is this true of the sweat glands; there is great increase of the solids of the sweat. This is true, even though the dose stimulates action quite short of sensible perspiration. A harsh, dry skin becomes soft and in good tone, and carefully preserved washings from the body yield the solids in appreciably increased quantity. With the entire glandular system of the body increasing its functional activity so as to bring about the normal balance essential to normal efficiency of metabolism, there must be caused the removal of the most common causes of blood-vessel hypertension.

The effect of pilocarpine on gland substance suggests its playing a part in colloid combination and deciding the to and fro make and break of the giant colloid molecule combination, which receives its impulse charge from the terminal nerve ends, and discharges it in interaction with the gland cell.

Suffice it to say that pilocarpine does establish the activities and conditions necessary to health which are usually wanting in hypertension, and this to such a degree as should assure it a prominent place in the armamentarium for the treatment of that condition.

From private work, the writer has notes of fifty-three cases where distressing hypertension existed, in which he has tested the use of pilocarpine. Short notes on a few will be sufficient indications of the results, as they are cases selected to represent broadly its effects.

Case 1.—Miss M. M., aged 68 years, head of a department in a large millinery house. Cerebral apoplexy 3 years ago; bedridden 3 weeks. Gradual improvement, enabling return to employment after one year, but with impaired speech, gait and arm and leg power. Distressing vertigo almost constant and headaches very frequent, and at times so severe as to prevent work. Blood pressure, systolic, 214; pulse, 84. Urine, average amount 30 ounces, sp. gr., 1012, urea 362 grains per diem. Few granular and hyaline casts, indican, and acetone. Constipation, intestinal fermentation, and coated tongue constantly present. Feeble perspiration response to hot packs. Pilocarpine, 1/30 grain, in glassful of water, after each meal, begun eight months ago, when patient came into writer's care. No sensible perspiration induced, but full evidence of decidedly increased insensible sweat, beginning after two months' administration. Pulse 78, pressure 194, vertigo much decreased. Full perspiration response to hot packs, given twice a week. Appearance and feeling of general betterment. After four months' improvement, continuous in all symptoms, pressure 182, pulse 74, no casts or albumin or indican. Three months later pressure 168, pulse 72, urea 462 grains, and evidence of improved health remark of all acquaintances.

Case 2.—J. F. K., man, aged 66 years, real estate operator, came into writer's care 14 months ago. Intensely nervous, insomnia, vertigo at times alarming, tinnitus aurium, constipation, gastric and intestinal indigestion. Headaches frequent and severe. Condition necessitated partial retirement from business. Urine, albumin a trace, many hyaline and few granular casts. Average amount 28 oz., urea 346 grains. Blood pressure 208. 1/30 grain pilocarpine hydrochloride with glassful of water after each meal, ordered, also continuation of hot packs, which soon began for the first time to prove effective. Usual orders as to diet, including liquids taken. Improvement began promptly with fall of pressure to 188 after three weeks, and to 166 after eight months, about which place it remained constant. General health and feeling, better than over eight years past.

Case 3.—Mrs. T. B. D., aged 71 years, slight build, palpable vessels, recognizably very atheromatous. Headaches frequent and severe, intensely nervous, harsh dry skin, bad digestion. Constantly coated tongue, present weight 106 pounds, a loss of 19 pounds since an apoplectic stroke involving the entire left side, twenty months ago. The palsy was profound for some weeks, and it was four months before patient could walk without cane. Some improvement in this continued for six or eight months more, since when the condition had been practically stationary. The gamut of the usual lines of treatment in such cases had been tried with her by three or four different physicians who had her in care at her summer home and other places of temporary residence. These treatments induced a full course of high frequency electricity and magnetism, in an effort permanently to reduce a pressure which persistently remained from 212 to 220. She was 3 months ago started on 1/30 of a grn. of pilocarpine, with full glass of water after each meal. The improvement in this particular case was surprising in every symptom. After 6 weeks the blood pressure never recorded above 168 and there was no evidence of unpleasant cardiac depression, cyanosis, nor occurrence of sensible perspiration properly attributed to the drug. A study of this case inclined one to feel that the pressure reduction was at least in part properly attributable to the reestablished normal glandular functions throughout the body, especially of the kidneys, sweat glands, and glands related to digestion.

Case 4.—C. T. C., man, aged 70 years, weight 206 pounds, florid complexion, engorged facial and neck capillaries, bad station at times, staggering on turning movements, and distressing feeling of intense engorgement of head. Blood pressure 190 to 206; usual treatments of no avail. Pilocarpine in 1/30 grn. doses at the end of two months, showed reduction in pressure only to 184; the dose was then increased to 1/20 grn. and after two months more, when only 10 Mm. addition fall was recorded, the dose was made 1/15 of a grn. 3 times a day. The persistent maintenance of this dose for the past year has been associated with a remarkable reestablishment of normal physical conditions. No ill nor inconvenience seems to have resulted from use of the drug, and the vertigo, tinnitus aurium, and turgid condition of the face and neck disappeared, and a condition of comfort and well being, such as had not been experienced for a number of previous years, became established. One particularly interesting feature in this case was that for the past twelve or fifteen years the man had annually suffered from so distressing a winter cough, more particularly at night, as to disturb his household and make himself wretched, so that several weeks' sojourn in the far South were made necessary at great business and domestic inconvenience. During the two winters he has been taking pilocarpine, he has not been afflicted with the cough, which, by the way, has no associated expectoration.

Case 5.—M. A. S., retired nurse, aged 56 years, suffering from chronic interstitial nephritis with photophobia, constant eye pain, and intense and distressing headaches several times a week, lasting for a number of hours. The usual treatments failing to give relief, pilocarpine in 1/30 grn. doses, 3 times a day, was added. A slow but steady improvement continued from the end of the second month, which was two years ago. Early in the treatment, the 1/30 of a grn. dose was followed by rather profuse night sweats and cardiac distress. The dose was gradually decreased to 1/90 of a grn., 3 times a day, at which it was kept constant. Copious quantity of albumin, many granular and hyaline, and some blood casts were the continuous record. For the last three months these were absent. The blood pressure, originally from 240 up to 270, was reduced to from 180 to 190, at which point it remained. On account of the great suffering of this woman, several prominent physicians were associated in trying to secure comfort for her, especially for her eyes and head. The consensus was that pilocarpine should be credited with the very decided improvement in her case which made life quite comfortable.

CONCLUSIONS

In intelligently selected cases of hypertension, pilocarpine has not failed to be of value, in many instances of very great value. The therapeutic dangers usually accredited to this drug have not been met with in the modified dose in which it has been used, a dose that is not mentioned in works on therapeutics and materia medica. The general feeling that the drug is a dangerous one, the writer feels, is due to the former habit of presenting the maximum dose of from 1/10 to 1/4 grn. A thoughtful study in selecting cases for the use of pilocarpine and an unprejudiced testing of the possibilities to be derived from its use, will gain for it many friends.

Six colleagues who have been using it as suggested, are all in accord in crediting it with great power for good, if thought and careful study of cases are associated with its use.

Chronic Prostatitis:

Antipyrinæ	grn. v
Sodii Iodidi	grn. iij
Olei Theobromatis	grn. xxx

M. f. suppos. No. I. Tal. dos. No. xij.
Sig.: One suppository t. i. d.

Morphinæ Sulphatis	grn. ¼
Extr. Belladonnæ	grn. ½
Olei Theobromatis	grn. xxx

M. f. suppos. No. I. Tal. dos. No. xij.
Sig.: One suppository t. i. d.

—W. J. Robinson.

HUNTINGTON'S CHOREA. SYNONYMS—CHOREA CHRONICA PROGRESSIVA, CHOREA HEREDITARIA, DEMENTIA CHOREICA

By Herman H. Hoppe, A.M., M.D., of Cincinnati
Professor of Nervous Diseases, University of Cincinnati; Neurologist to the Cincinnati General Hospital and to the Good Samaritan Hospital.

Since Huntington described this family affection in 1871, it has been recognized and reported all over the world. It is a very rare affection, only one family of the kind being known to the writer.

Etiology.—This disease is distinctly a family affection and is inherited alike by the male and female members. Some reporters assert that when it skips a generation the disease dies out in that branch of the family. Oppenheim states that it may be replaced by hysteria and epilepsy. In the writer's family the healthy mother transmitted the disease to her daughter, but it is possible that the mother herself may develop the disease at a later age. The disease has been traced back for five generations; in the writer's family for three generations. In these three generations, in two branches nine members were affected, and it was the history of the family that it could be traced back as far as the maternal grandmother and that all the members of the family who had had the disease for the past forty years, had died of it after a period, varying from eight to twenty years. Some of the members of this family developed the trouble early—one at fourteen, another at eighteen, some between twenty to thirty years, one at thirty-six; the maternal grandmother at sixty. The disease usually comes on in adult life, between thirty to forty years of age. Heilbronner states that the disease shows a tendency to develop later in life in succeeding generations. This was not true in the above family; aside from heredity there is no other cause.

Pathological Anatomy.—In two cases examined in Oppenheim's laboratory the writer was able to find numerous disseminated areas of encephalitic degeneration, which were more numerous in the Rolandic areas of the cortex and the subjacent white matter, but present over the entire cortex. In addition, there was found a diminution of the small ganglionic cells of the cortex, and more or less diffused sclerotic changes in the cord. Biswanger states that in his case it was impossible to differentiate the pathological changes present from those usually found in dementia paralytica. The process is probably a diffuse chronic meningo-encephalitis (Greppin, Kalisker and Kronthal, Facklam, etc.).

Lannois and Perriot look upon a hyperplasia of the neuroglia of the cortex secondary to a round-cell infiltration, together with a disappearance of the supratangial fiber layer, as the essential pathological manifestation of the disease. Others believe (Rossi, Buck, Spiller and Besta) that the primary cause of all the pathological changes are to be found in a diseased condition of the cortical arteries.

As secondary manifestations there are always found thickening of the meninges, external hydrocephalus, at times pachymeningitis interna hemorrhagica and atrophy of the cortical convolutions.

The pathology does not explain the hereditary feature of the disease. Lannois and Perriot consider that the basis of the disease is a teratological malformation of the neuroglia.

Symptomatology.—The symptoms present a combination of motor unrest, associated with slowly progressing mental deterioration, terminating in dementia.

The onset of the motor unrest is gradual, beginning in the face and hands, increasing in extension and intensity as the years pass by until all voluntary muscles are affected. The movements, on the whole, resemble those of acute chorea; the movements are involuntary, purposeless and inco-ordinated, the face, arms, trunk and legs are in a state of constant movement, the face is drawn up on one side, the shoulders elevated, the fingers flexed and extended, the trunk twisted and squirming, the legs jerked about, there is constant grimacing and inco-ordinate gesticulation, the eye muscles are usually not affected. Speech is interfered with by the movements of lips and tongue, the gait becomes uncertain and unsteady, due to jerking movements of the legs. The movements are all increased by emotional disturbances; they usually cease during sleep. Volition exerts a calming influence, and patients can suppress the motor unrest sufficiently to dress and feed themselves, except in the advanced stages. Intention movements have a temporary inhibiting effect on the choreic movements.

Walking is possible even in the advanced stages, but the gait becomes unsteady and often grotesque as a result of the sudden and quickly changing irregular and unexpected movements of the trunk, hips and legs. Muscular power usually remains normal. In the writer's case there was a paresis of the left facial region. In one case a hemiparesis was noted. The reflexes are usually exaggerated. In the writer's case they were absent. Sensation is normal.

* Lancet-Clinic, Nov. 7, 1914.

In addition to the motor phenomena, mental changes are invariably noted. These usually begin after the choreic movements have been in existence for some years. In the beginning they take the form of apathy, indifference and lack of concentration. Often there is added marked mental depression, alternating with irritability and even passing conditions of acute excitement. Throughout the course of the disease, there develops a gradually increasing mental weakness, which in many cases terminates in dementia.

Prognosis.—The prognosis is bad, the disease is progressive, and its duration varies from eight to thirty years. If the patient does not die of an intercurrent disease, he finally becomes bedfast and dies of malnutrition, or in the state of coma, superinduced by repeated attacks of pachymeningitis interna hemorrhagica. Some cases do not pass into the state of terminal dementia.

Diagnosis.—The chief diagnostic feature is the heredity, and this can usually be ascertained. It is not unusual to find in acute chorea that the mother or other members of the family have had chorea, but it is unusual to find members of the same generation in several branches of the family, or in two or three generations back, in which not only the direct line but also the collateral lines have been affected with chorea. This occurs only in hereditary chorea; the mere long duration of a chorea should not tend to make the diagnosis. Cases of chorea of two or three years' duration are seen, which get well under appropriate treatment. These latter cases, however, show exacerbations and remissions, whereas the chronic chorea is always progressive, and in doubtful cases the progressive character of the choreic movement, increasing in extension and intensity and not yielding to treatment, are the diagnostic features.

Treatment.—There is but one ray of hope in the treatment of chronic chorea, and that is the close resemblance of the pathological findings to those of dementia paralytica. There is a possibility that the hereditary rôle may be played by an attenuated form of syphilis, and that a mild continuous use of antisyphilitic treatment in the form of mercury, potassium iodide and the intermuscular injections of cacodylate of sodium may be of some use. In a disease as hopeless in its therapy as this one is, there can be no serious contraindication to the intravenous administration of salvarsan. Sedatives are always indicated and the movements may be ameliorated by the use of strontium bromide, given in thirty to forty grain doses at bedtime. The general hygiene should be the same as that of acute chorea.

CHOREA ELECTRICA

Under this heading various conditions have been described which are partly of an infectious character, partly hysterical, and in part bearing a resemblance to myoclonia.

DUBINI'S DISEASE

This obscure disease was first described by Dubini in 1845. It bears no resemblance whatever either to acute or chronic chorea, but has derived the name of electric chorea from the quick, jerking movements which are present in the face and extremities.

Etiology.—The disease occurs in and seems confined to Northern Italy, and especially Lombardy. The cause is unknown, although infection seems to play the chief rôle. Malaria is often looked upon as the cause, but so are other diseases, notably typhus. It can occur at any age.

Symptomatology.—The onset of the movements is usually abrupt, preceded by pains in the head, neck and back. The movements are quick, lightning-like, as if produced by an electric current. The spasms are frequent and affect an arm or a leg or the side of the face, first on one side and then involving the other. Epileptic seizures occur, at times general, at others unilateral. The seizures occur without loss of consciousness and are usually followed by paresis. Paresis develops in the course of time, usually beginning in the extremities, which were the seat of the first spasms. The paresis becomes more or less general, and atrophy and disturbances of electric reaction are present. The disease runs an acute or subacute course. It may terminate in a week, or last as long as five months. Sensation is affected in the sense of hyperesthesia. Slight touch is capable of producing seizures, the spasms are painful, consciousness is not impaired, fever is usually present.

The disease progressively becomes worse, the spasms become more generalized and more intense, the epileptic seizures become more and more frequent, at times a number in one day. The fatal termination is preceded by more or less continuous epileptic seizures and coma. A fatal termination occurs in 90 per cent. of cases, the cause of death being often cardiac paralysis. When recovery takes place it seems to be spontaneous and not the result of any special treatment.

Pathology.—The pathological findings are those of an infectious cerebrospinal menin-

gitis. There is no pus formation, the meninges are inflamed, the cerebrospinal fluid is increased, areas of softening in the cortex and basal ganglia, together with splenic enlargement and pulmonary congestion.

Treatment.—No form of treatment has been found to be of much avail; in the absence of any known cause only symptomatic treatment can be instituted; this should consist of free purgation with calomel and salts. The salicylates and sodium benzoate in large doses would be indicated to overcome any infectious agent. For relief, chloral and bromides should be given.

HENOCH'S ELECTRIC CHOREA

The condition usually affects young children; the spasms are quick and violent as if produced by an electric shock. They occur at intervals of from three to five minutes, and usually affect the muscles of the neck and shoulders. Most writers are agreed that this disease, which bears no resemblance at all to acute chorea, should be classed among the myoclonias. Bruns, however, claims that Henoch's and Bergeron's electric chorea are identical.

Bergeron's electric chorea affects older children, usually up to the age of thirteen or fourteen years. It is characterized by the suddenness of its onset and the rapidity with which it attains its maximum. It occurs usually in anemic and irritably nervous children, and the attack seems to bear a relation to gastric disturbances. The spasmodic contractions resemble contractions of groups of muscles produced by strong electric currents. They are sharp, strong and brief. The head may be thrown from one side to the other, the shoulders suddenly elevated, the forearms violently flexed, the arm abducted. The spasms may remain localized to one part of the body, but they are usually generalized; they cease during sleep, voluntary efforts at control not only fail, but often intensify the spasms; sensation is normal. The prognosis is good; the disease usually terminates after a few days or weeks in recovery.

Diagnosis.—It is impossible to differentiate this form of electric chorea from hysterical chorea.

Treatment.—The prevailing opinion of the French, among whom Bergeron's chorea is seen most frequently, is that the disturbance is secondary to gastric disorders. The fact that relief is frequently obtained by the use of emetics is an evidence of the psychic origin of the manifestations. Emetics should always be given, and, if necessary, repeated.

In severe cases the patients should be strictly isolated and the regimens of the rest cure with cold spray baths, massage, packs and active and passive movements carried out; arsenic is of undoubted value.

THE TREATMENT OF WHOOPING COUGH*

By Maxwell S. Simpson, M.D., of Titusville, N. J.

THERE is no infallible remedy for whooping cough! "We can alleviate, we can palliate, and we can prevent." The treatments advocated have been founded upon the supposed nervous origin of the disease, and upon the theory of infection, with many empirical remedies added thereto. It has been considered as simply a neurosis, as a bronchial catarrh with associated nervous disturbance, as a bronchial catarrh with glandular enlargement exerting an irritating pressure upon the pneumogastric nerve due to infection, and as a germ whose habitat is the respiratory mucous membrane.

It is the purpose of the writer to base the following essay upon an analysis of 300 late consecutive cases coming under his direct observation. Of these cases it is noted that antispasmodics entered, more or less, into all internal medication. The vaccine treatment is credited with but nine cases, and these will be referred to as a separate class. In these cases, and it is always good practice, a record was kept of the number and character of the paroxysms as an index of the result of treatment.

Antipyrine was most successfully employed of all the antispasmodics used. Its value is beyond question. Children stand it surprisingly well, take it readily, and no bad results were noted, not even depression. The initial dose, in each instance, was small. One grain, increased to 3 grains, at three-hour intervals, was given to a two-year old patient.

Antipyrini ..... grn. xvj
Sodii Bromidi ..... grn. xxx
Syrupi Rubri Idæi ..... f. ℥v
Aquæ ..... ad f. ℥ij
Solve et ft. mist.
Sig.—One teaspoonful, in water, every two hours. For a two-year-old patient.

One grain to each year, with a maximum of 5 grains may be administered. Its value was found to be enhanced, especially if there was a tendency to convulsion, by combining it with sodium bromide. The mixture should be given with plenty of water, or on a full stomach. Digitalis may be added if there is reason to protect the heart, yet the heart suffers little through

* N. Y. Med. Jour., Dec. 5, 1914.

whooping cough *per se*. It is not followed by structural change. Phenacetin will act sometimes when antipyrine fails, and should be tried or used alternately.

Bromoform was used in eighty cases.

Bromoformi ..... gtt. xvj
Glycerini ..... f. ℥jss
Tincturæ Cardamomi Compositæ .....
Alcoholis ..... āā f. ℥ij
M. Sig.—A teaspoonful every two hours until four doses are taken. Keep well stoppered, in a cool place, and shake when used.
For a two-year-old patient.

In thirty, improvement was rapid, the severity of the paroxysm was relieved, and the number lessened. The best result was obtained when it was increased to tolerance. If toxic symptoms were suspected, caffeine citrate was added, or strong coffee given at regular intervals during its administration. Four doses of one drop each at two-hour intervals were given a two-year-old child. This was followed by the same dose, not oftener than two hours, as needed. Larger doses produced a dull, stupid condition with no greater benefit. Several cases failed of relief, and the remedy was changed at once to antipyrine, with invariably good results.

In twenty-two cases belladonna was used, giving as an initial dose two drops of the tincture of the fresh leaf to a two-year-old child, every two hours to physiological effect. This influence was then maintained by administering at longer intervals. A solution of the neutral sulphate of atropine—1 to 1,000—may be used, beginning with two drops and increasing to six drops. Belladonna was used on account of profuse bronchial secretion, and with good effect, but in no way did it lessen the number of paroxysms or shorten the time of the disease.

Quinine does its best work in the presence of malaria. In a malarial region it should be used with other remedies regardless of the evidence of a malarial complication. Give it suspended (syrup of yerba santa) or in a solution, but large doses distrub digestion, and this must be reckoned with.

Cough from the onset does not depend upon bronchial catarrh alone, but on the peculiar nervous character of the disease, and when cough is so troublesome that wakefulness results, it becomes dangerous, and must have attention independent of other conditions. Chloral yielded best results, especially when added to the bromides, using then the bromide of ammonium. Two to four grains were given to a two-year-old child at bedtime. When administered during daytime it exerted an influence, but was too depressing. In a few very severe cases codeine was given in $\frac{1}{10}$ grain doses at bedtime, and repeated not oftener than twice in the night. Opium was avoided as much as possible. Heroin is more dangerous than morphine, dionin is safer, and was employed—$\frac{1}{60}$ grain for a two-year-old patient—with much satisfaction.

In severe paroxysms of coughing and vomiting where remedies, for one reason or another, did not control, the belt devised by Dr. Kilmer was used with decidedly good results. It was made of linen with elastic side insets, and eyelets at the back for lacing, and was applied over the nethermost garment and laced firmly. Children old enough to appreciate it asked for its use.

If vomiting is controlled and the patient can get the required amount of sleep, much is accomplished. A solution of cocaine (five per cent.) painted over the pharynx was of advantage, but it is dangerous sometimes and must be used carefully. At times $\frac{1}{10}$ grain cocaine or $\frac{1}{1}$ grain menthol by the stomach did well.

Hygienic care throughout the attack is of vital importance. Air laden with carbon dioxide brings on the cough paroxysm. The air of the room must undergo constant change night and day, and remain at a temperature of 68° to 70° F., and at the same time the supersensitive mucous membrane must be protected to avoid a complication of bronchopneumonia. It is well to use two rooms and to warm and ventilate one while the other is in use. In winter it is best to confine the patient to the house the greater part of the time. The pine air of the mountains and the ozone of the sea are recognized as beneficial. The child must sleep alone and use separate dishes and utensils. All expectoration must be destroyed with a 1 to 2,000 mercury bichloride solution.

The diet of children under two years of age should be fluid, nutritious, and frequently administered; milk with lime water, or carbonated water, or peptonized, broths, albumin or barley water, predigested liquid beef. For children over two years old, if vomiting is not severe, semifluid foods, or easily digested solid food, may be used; kumyss, custards, barley, oatmeal, junket. If the meal is vomited it may be repeated after a short interval. Alcohol is sometimes demanded, and may be given with liquid beef peptonoids, or as a panopeptic milk punch, egg nog, sherry, and albumin water.

The bowel action requires attention. All mucous membranes are affected. There

are indigestion, abdominal distention, a constant tendency to emesis, a "mucous discharge." If the dejections are excessive the bowel should be washed from time to time with a warm normal salt solution, and bismuth administered.

The clothing should at all times accord with the atmospheric temperature and humidity.

The complications of whooping cough are many and largely increase its fatality. The most fatal in cold, damp seasons is bronchopneumonia; in hot weather, gastroenteritis. Complications connected with the the respiratory tract are the most prominent—bronchitis, atelectasis especially in younger subjects, or bronchopneumonia as a result of the attending atelectasis is most common and dangerous. Serious epistaxis, cerebral hemorrhage, heart strain, hernias or convulsions may result from the paroxysm. Convulsions are not frequent, but often fatal when they do occur.

Whooping cough may be associated with other infectious diseases, but is especially likely to be found with measles. The atelectasis of an accompanying bronchopneumonia is best relieved by inhalations of steam. Turpentine, terpene, creosote, carbolic acid, and resorcin are added, but plain steam gives relief to the cyanotic condition just as well. Use the inhalations ten minutes each hour.

Children of tuberculous or syphilitic diathesis, or with a profound anemia or rhachitis, must receive treatment in accordance with this condition. In tuberculous cases it is well to add 2 to 5 drops of creosote carbonate in milk three times each day, or beechwood creosote may be used.

The nine cases in which pertussis vaccine was used showed a positive decrease in the number and severity of the paroxysms, and a complete cessation in vomiting, and in one case of unusual severity cyanosis disappeared rapidly and the spasmodic coughing dwindled to that of ordinary bronchitis. The disease was so modified that the course seemed shortened. In a two-year-old child, in the second stage, with the whoop well developed, 0.5 Cc. (50,000,000 bacilli per Cc.) was injected in the interscapular region. During the following twenty-four hours the symptoms were aggravated; in the next twenty-four hours the cough diminished. On the third and fifth days the injection was repeated with decided and continuous improvement. In ten days the cough had ceased. The whoop of habit was noticed, however, at intervals during the following six months.

In future cases the writer will use the vaccine treatment whenever available, supplementing this with symptomatic treatment when needed. All effort will be made to allay irritation, to prevent complications, to provide an equable, purified atmosphere, proper clothing, plain nourishing food; to endeavor to keep the bronchial tubes free of mucus, to be prepared to deal with patients of neurotic tendency or idiosyncrasy.

ACUTE ILEO-COLITIS OF INFANCY*

By Daniel V. O'Leary, Jr., M.D., of Albany, N. Y.

The grim reaper is annually gathering too many of our rising generation by means of this much-feared disease. It is a true inflammatory intestinal disease in which the pathological condition may or may not continue until marked lesions have been produced, often involving all the walls of the gut, and while it is a pathological designation originally, it has distinctly become a clinical symptom-complex.

Although it is seen more frequently in summer and in children under two years of age, it may affect those of any age and in any season of the year. Epidemics are not at all uncommon in the early fall months and even later. The writer had an epidemic to combat in a local institution in October, 1913. It is usually primary but often follows the infectious diseases. Marasmus and malnutrition, especially in institutions, are frequently the forerunner of this condition. Any form of intestinal disease may be a predisposing factor. It seems to be contagious, as every precaution was taken in the October epidemic. The milk is certified and was given to all children in the institution. The children under one year, who were upstairs, all contracted the disease. The children downstairs who never were in contact with them and had different nurses, were free from it. The windows were screened and even the cribs were covered with netting so that a fly could not reach the child. Each child has its individual bottle, which is washed separately and sterilized, and every one of the babies on the second floor developed ileo-colitis.

Many theories have been advanced as to how the disease is introduced into the system and what organism produces it. B. Dysintericus has received considerable attention as an etiological factor. Shiga established it with reference to ileo-colitis in Japan, Flexner in the Philippines, Duval

*Albany Med. Annals, Oct., 1914.

and Bassett in Baltimore. It is invariably found when blood and mucus are present, and rarely found in pure culture. The streptococcus frequently presents itself. Dr. C. B. Gruber, of Chicago, notes that perhaps the B. coli suddenly becomes pathogenic and produces the condition. The B. pyocyaneus has been found. Whatever the germ may be it is rarely found alone, and as to its introduction into the system different processes have been advanced.

Bacterial infection which many American pediatricians advocate means direct infection of the system through the intestinal walls. Another theory is that bacteria act as agents in decomposing the bowel content, the resulting product being toxic. Volatile fatty acids, the product of fat and sugar decomposition, are distinctly irritating to the mucosa and may be a cause. Finklestein maintains that it is the result of a metabolic disturbance produced by either too great quantities of normal elements or of elements which as absorption products, may be regarded as abnormal. He bases his theory on the fact that oral or subcutaneous administration of sodium salts or sugar will produce a rise in the temperature, but we must remember as the salts and sugars traverse the intestinal canal they are subject to the ferments and bacteria and in the end be only a favorable medium for the growth of intestinal bacteria and the production of toxins. Another cause is heat; just what position that takes as an etiological factor is by no means definitely determined.

The symptoms of this particular class of intestinal disease differ from those of the non-infectious diarrheas. The onset, however, may be preceded by symptoms of a non-infectious form or it may be acute from the beginning. The temperature is always elevated—the pulse accelerated. There is rapid loss of weight and strength; vomiting may or may not be present; when present it is severe, especially at the onset. Diarrhea is constant, ten to twenty stools, and even more, in the twenty-four hours. Tenesmus is often present. The stools at first contain fecal matter but soon contain mucus, pus, blood or shreds of membrane. The odor is often very offensive, except when much mucus is present. The color varies, generally a mixture of brown, green and yellow or it may be any of those colors alone. The consistency of the stool is lessened. Blood is often present, but it does not always denote ulceration, as it frequently comes from the engorged blood vessels in the gut which are ruptured by straining. The abdomen quickly becomes distended, tympanitic and tender to deep pressure. The child is very restless and in severe cases there may be delirium and convulsions. Appetite is lessened, urine diminished and high colored. Prolapse of the rectum may occur as a result of prolonged tenesmus and the skin in the region of the anus is irritated. In simple catarrhal ileo-colitis where ulceration is not present the symptoms are milder. Vomiting is usually present, however. The patient usually begins to improve in a few days and at the end of two or three weeks is entirely recovered. Relapse is quite common and is usually due to the diet which should be carefully regulated. Many cases are fatal. Even a simple catarrhal ileo-colitis may rapidly become fatal. Ulceration generally means death.

Although the detection of a specific causative organism is the only certain means of diagnosis, the presence of mucus in the stools, the early appearance of blood, continued high temperature and the special characteristics differentiating infectious diarrhea from the non-infectious form generally can be pronounced ileo-colitis. Cholera infantum and the other infectious diarrheas are differentiated by the constant vomiting and the discharge in the stools which are serous.

The prognosis is in most cases favorable except in epidemics of unusual severity. When ulceration is present it is unfavorable and when the symptoms increase in severity and the little face looks pinched, when vomiting persists and the nervous symptoms predominate the prognosis is very unfavorable. Certain complications also affect the prognosis and will be described later.

To treat acute ileo-colitis intelligently is a good deal a matter of individual judgment based on individual experience, because our evidence of etiology is not yet absolute, as no specific bacteria have yet been found and the anti-dysenteric serum has proved to be a flat failure. The treatment is dietetic, hygienic and medicinal. Too much stress cannot be laid on early and energetic measures in the treatment of this disease. Do not allow the parents of your helpless patients to be deluded with a teething or worms or any other equally foolish idea. First decrease the amount of the feeding, whether breast- or bottle-fed. Sometimes I discontinue milk entirely and use barley water, peptonized foods and beef broth, at other times skimmed milk, buttermilk and acid milk according to the cases; as the symptoms improve the diet is gradually increased to the normal.

Cream, top milk and malted foods should be avoided entirely until the patient recovers. For months after an acute attack the diet should be carefully watched, as relapse is the one thing to be avoided.

Daily baths in tepid water and an abundance of fresh air are essential. When possible, send your little charges away after convalescence is established for a change of air, and improvement will be more rapid.

It is best first to empty the gastro-enteric canal of all offending substances, usually by a course of calomel followed by castor oil. Irrigation of the colon with about two quarts of normal salt solution at 104° F. injected high helps wonderfully, and if the stools continue to be profuse it should be given twice daily. Many eminent pediatricians condemn the use of bismuth. I have used it with great success; it is astringent and forms a protecting coat over the mucosa. I give 15 grn. to a child of one year and repeat four times daily. When pain and tenesmus continue opium is indicated I give a half minim of the deodorized tincture and repeat as necessary. Also small injections of hot water and ice water may be used. When blood is present astringent injections should be used. Tannic acid, one dram, to water, one pint, is very useful. If the child screams and struggles do not persist, as complete rest is absolutely necessary, and if necessary give a subcutaneous injection of morphine, $\frac{1}{20}$ grn., and atropine, $\frac{1}{200}$ grn. A weak pulse, cold extremities, or complete prostration indicate alcohol. Brandy, ten to twenty drops well diluted, has saved many babies.

When the patient begins to convalesce it is often wise to stop all medication and give careful attention to the diet with irrigation and change of air when possible. General tonics are required at times, such as iron, nux vomica and arsenic. Buttermilk has been used for the last ten years more or less extensively to combat intestinal fermentation of infancy. Kindal, in 1910, drew attention to the value of the lactic acid ferments in reducing intestinal putrefaction.

Drum pasteurized modified milk mixtures and ripened them with cultures of pure lactic acid bacilli. This treatment and the buttermilk treatment have given good results. However, the lactic acid bacilli in buttermilk do not survive after ingestion and therefore cannot multiply in the intestine to produce sufficient lactic acid to destroy the putrefactive bacilli.

Metchinikoff found that Bacillus Lactis Bulgaricus will live and multiply in the intestine after ingestion and will destroy putrefactive organisms. Bolonowsky, Colyndy, Herten, Kendal and Clock confirmed these observations. I had five cases on the B. B. emulsion and four on the B. B. tablet. These cases had been ill anywhere from four to fifteen days before the B. B was instituted; of the five on the emulsion four recovered immediately. Those on the tablets three recovered. Two cases that died were in the extreme stage of disease and only one lived one day after the medication was started. All that recovered showed a gratifying gain in weight.

Common brewers' yeast of the ale variety has proved of considerable value. I used it in four cases with good results and in one case complicated with dermatitis necrosa which died.

Wet-nurses were often employed where the infant seemed to be in need of human milk.

Complications.—Erythema intertrigo about the genitals, perineum, thighs and lower abdomen is of frequent annoyance, and is caused by the acid irritating discharges from the bowel. The erythema may develop into a dermatitis and it is avisable to use prophylaxis before the erythema develops. Furunculosis is often a very distressing complication in ileocolitis. Usually it develops on the head and I have seen the necrosis of the scalp extend to the pericranium, leaving a bare surface as large as a quarter of a dollar. Abortive measures such as iodine, silver nitrate, etc., prove futile. Incision as soon as the evidence of suppuration is the rule, hastened by hot boric acid compresses. Frequently pus does not form; then thoroughly scrubbing with green soap and water following with an alcohol bath will alleviate the condition.

A 25-per-cent. ichthyol plaster tends to prevent autointoxication.

Hypostatic congestion of the lungs is due to prolonged recumbent position, weakened heart action, deficient respiration and the influence of gravity; generally the posterior and inferior portions of the lungs are involved. This should be met by frequently changing the position and giving such agents as digitalis, belladonna and caffein. The digitalis gives greater force to the ventricular systole and tends to overcome pulmonary congestion and relieve an engorged right heart. Belladonna lessens the extravasation into the lungs and caffein is a powerful pulmonary stimulant. A sponge bath with friction tends to tone up the vasomotor nerves. This condition should be carefully guarded against, for if not properly treated venous

distention of the right heart and other vital organs may be the final scene in ileo-colitis.

If the child has suffered severly from the bowel condition it is in poor shape to combat pneumonia. The activity of the micro-organism is stirred up and finds a fertile soil to set up a catarrhal pneumonia not unlike that complicating the exanthemata. As a primary disease the prognosis of pneumonia is good, as a complicating factor it is grave.

Tubercular pneumonia may develop and is fatal. The general treatment of pneumonia is indicated.

Ulceration of the Bowel.—The autopsy table often shows the impossibility of diagnosing during life the gravity of the intestinal lesions and range from the simple hyperemia of the mucosa to deep follicular ulceration. The lower two or three feet of the ileum and the colon are the site of the lesions. Perforation is practically unknown.

Intussusception due to mucosal irritation in ileo-colitis may set up an irregular muscular action causing a minute infolding of the gut which slowly increases until the dignity of a complete intussusception is attained. The clinical picture is one of obstruction. The patient is suddenly seized with paroxysmal abdominal pain; vomiting continues until feces appear in vomitus. The temperature varies from 101 to 103°; pulse, 120 to 150. There is rectal tenesmus with a discharge of blood and mucus and after a few hours a mass can be felt at the site of the intussusception. Prognosis is grave. Nature rarely helps. One should first attempt to reduce this by inflation or injections and taxis under anesthesia. A No. 18 American catheter, well oiled, is attached to a fountain syringe filled with two quarts of normal salt solution. Hang the syringe three and one-half or four feet above the child's body and have the buttocks raised about one foot above the shoulders. The solution is then allowed to flow into the colon while a towel is packed around the catheter at the anal opening to prevent the escape of fluid; by gentle abdominal manipulation a reduction may be accomplished. If the surgeon fails, he should be in readiness to do a laparotomy under the same anesthesia. Fisches, of New York, states the mortality rate of surgically treated cases is about 50 per cent.

Although I have never seen it, Dr. Alfred A. Robinson, of Salt Lake City, speaks of spurious hydrocephalus and infantile spinal paralysis, as complicating acute ileo-colitis. Spurious hydrocephalus, he says, is due to a passive congestion of the brain and is characterized by fretfulness followed by vomiting, by increasing drowsiness, pupils not sensitive to light and contracted. Finally vomiting ceases, the stools are less frequent, urine scanty and death supervenes. Poliomyelitis, according to Sachs, is not out of place in speaking of the complications of ileo-colitis as it occurs usually in summer. Three-fifths of all cases of infantile paralysis occur before the fourth year and frequently it is associated with vomiting and diarrhea. Robinson mentions such a case in the epidemic of ileo-colitis in Western Pennsylvania in 19017.

I found the disease to be primary forty-two times with no complications, and the following complications accompanied it as tabulated hereafter: Marasmus, 14; acute inanition, 15; broncho-pneumonia, 8; heat, 8; acute miliary tuberculosis, 2; furunculosis, 10; intestinal obstruction, 1; pemphigus, 1; intertrigo in many cases and not indexed. Therefore, it can readily be seen that in spite of every care complications do arise and often terminate this disease.

RHEUMATOID ARTHRITIS*

By D. Durward Brown, M.D., of Harrogate

To most medical men rheumatoid arthritis presents itself as one of the most insidious, most perplexing, and even most mysterious of the ills of our modern time. It is, if we may trust tradition, growing in the frequency of occurrence. The obvious commentary on such a statement is that it is now more readily diagnosed. It certainly has signally arrested our regard in Harrogate, where we yearly see an ever-increasing number of cases.

Before approaching the subject of treatment I must claim the benefit of your intelligence whilst I shortly run through the etiology of this disease, for treatment is but the sequel of such an understanding.

General Causes.—1. Absorption of toxic products—for example: (*a*) Pyorrhea alveolaris, 70 per cent. of cases are due to this cause; (*b*) leucorrhea; (*c*) local suppurations; (*d*) worry; (*e*) thyroid changes.

2. Menopausal causes: (*a*) Artificial; (*b*) natural, often premature as to time.

3. Inflammatory abdominal causes, as in a case reported by Dr. Woodcock, in which an acute abdominal crisis, apparently without suppuration, was followed in two months' time by a typical acute rheumatoid arthritis, affecting the joints universally.

The Direct Chemical Cause.—This is the

* British Med. Jour., Oct. 17, 1914.

abnormal fermentation products of carbohydrates. Such foods seem to form a generous nidus for the growth of microorgansims. Men suffer less than women from this disease.

Another point I should like specially to bring to your notice is the connection of certain spinal disorders and rheumatoid arthritis. In these cases the spine is attacked by infective inflammation, as metastatic arthitis, or a chronic cerebrospinal toxemia is followed or preceded by changes in the joints of the spine, the joints of which show the characteristics of rheumatoid arthritis, but the changes are not limited to the spinal bones, at least, so I find in the very many cases I have met with among visitors to Harrogate. I decidedly lean towards the theory that the changes in the joints and muscles which are characteristic of rheumatoid arthitis may be due to irritation and destructive lesions often first located by the physician as being in the spinal ganglia, and especially met with in the cervical and lumbar enlargements.

In my early cases with a history suggesting a septic cause, I find that although the main symptoms present are often stiffness of the fingers with slightly enlarged joints, yet the spine, especially at the eighth or ninth dorsal, shows a decidedly painful spot, and when the patient's attention is called to it, he or she will remember vague inconvenience at intervals which she has suffered for years.

Some authors hold that the cause is either infective or nervous, but why separate causes which are interdependent?

Treatment.—The aim of treatment in all cases must be as follows:

1. To remove the toxic cause in the digestive tract; the greatest offenders in this direction are the teeth, gums, and, to a less degree, the nose, tonsils, and stomach. The teeth must be removed or otherwise treated by antiseptics. A case I had two years ago illustrates this:

> Miss M., aged 45, was so lame as not to be able to walk without a stick; both knees very swollen and tender; hands stiff, but no deformity. On inquiring, I found she had a full set of false teeth, and she said they were all right; but, on asking her to remove them, I discovered the teeth had been broken off, and all the stumps were left, and the mouth was in a filthy condition. I advised extraction of the teeth, which was done (two or three at a time, as, to my mind, the disease is aggravated if they are all taken out at one sitting), and within a month the knees were reduced to almost normal, and the last time I heard she was able to play the English national game, which every Scotsman knows to be golf.

The nose must also be examined and treated, if necessary.

The stomach must also be treated with care; and might I mention here that in the majority of cases of rheumatoid arthritis I find dilatation of the stomach to a greater or less degree?

Leucorrhea and all other discharges must be inquired into and treated by the gynecologist.

2. To encourage the elimination of the poison by the bowels, kidneys, and skin.

The Bowels.—In Harrogate we make use of the Plombières treatment, and, if thought advisable (a lot of these cases are not able to stand too drastic treatment), the sulphur water each morning for the first week at least.

If at home, Hunyadi water, or a similar water, might be given three mornings running, and after which a large enema twice a week is necessary.

Drugs.—Among the principal drugs I place creosote or guaiacol, and I certainly agree with Dr. Luff that great benefit can be got by their use. I generally order it in the form of a cachet (guaiacol carbonate 5 grn.; guaiacol resin, 5 grn.); and if pain is severe I prescribe calcii acetosal, 5 grn., and quinine sulphate, 1 grn., and these I give on alternate weeks with some form of iodine, and also in most of these cases thyroid extract (1 grn.) twice or thrice a day.

Might I point out here that not only does the internal secretion of the thyroid gland promote appetite, digestion, and peristalsis, but also it neutralizes any toxic substances resulting from imperfect digestion of food and therefore is an adjunct in the cure of rheumatoid arthritis.

All these must be continued for months or even years, and personally I have greatly rejoiced at the results of this treatment.

I have also used solution of magnesium sulphate (25 per cent. solution, use 2 Cc.), injected into the muscles, but the results are uncertain, although in more acute cases of rheumatism the results have been brilliantly successful. I got the idea from Russell, of Edinburgh, and A. B. Jackson, of Philadelphia, and certainly in some cases it is all that they promise.

General tonics must not be forgotten—their name is legion, and a few are good. Syr. ferri hypophos. co. will do as well as any.

Kidneys.—Hot water should be taken the last thing at night and first thing in the morning.

Electric Treatment.—Blistering the spine has been recommended by several authors, and I have carried out this treatment in several cases with good results. The blisters are applied in the mid-dorsal and lum-

bar regions, and the wounds kept open for three weeks with savin and resin ointments, but the fault I find with this drastic treatment is that so few patients will submit to it, and, besides, why continue this when the same results can be procured from ionization? In this I always first of all treat the back, feeling very confident that the spine is the primarily affected part. The ionization is applied in the form of pads of potassium iodide and lithium—one on the dorsal and the other to the lumbar region. Later I treat the other affected parts in the same way, such as the knee, hand, foot, etc. Alternating with this treatment I give d'Arsonval or static treatment, according to whether the blood pressure is above or below normal. If there is much pain in any of the joints I also give Berthollet baths (hot steam) to the affected parts, also "light and heat" and peat baths.

Massage and Exercises.—This is very important towards the end of the treatment, specially when the disease is complicated with fibrositis, or in some cases of panniculitis; also to give tone to the abdominal muscles and indirectly to the stomach and bowels. With these I usually advise some light exercises, especially those of resistance.

Summary.—Is rheumatoid arthritis increasing in frequency? The answer I would give would be Yes, but one reason that might disprove that assertion would be the more frequent capable diagnosis made in the disease. Then I should ask, Is it curable? Now here I give a very emphatic Yes; although we deplore almost every day how patients are told that there is no cure for rheumatoid arthritis, and practically nothing can be done for the patient. I think this is deplorable. Why should a disease so frequent be left to its fate in this stupid manner? Can you blame patients who get no assistance from their own medical men reverting to all sorts of advertised quackery?

Therefore, let us agree that the first thing is to remove all sources of infection and especially associated with dental decay. Then, if possible, hurry the patient into a nursing home, where she will be away from any worry or alien thoughts. Keep her in bed as long as possible, up to three weeks or a month, and all this time electric massage and bathe her, and above all feed her generously.

Do not despise suitable treatment by drugs, and at the risk of undue repetition, go in manfully for electricity and massage, but above all devote the latter to the spine primarily and to the other joints secondly. This treatment can, no doubt, be best carried out at a spa. After the period of passive movement comes the period of active movement, and many nowadays would give less bed than I have given.

INTERSTITIAL KERATITIS AND ITS TREATMENT*

By Leighton F. Appleman, M.D., of Philadelphia, Pa.

Interstitial or parenchymatous keratitis, as the name indicates, is an inflammation which is characterized by an infiltra- into the middle and deeper layers of the cornea, without a tendency to purulent disintegration or ulceration, and with an ultimate tendency to disappear, more or less completely, by resorption.

The disease occurs most frequently between the ages of five and twenty years; in the majority of instances a result of hereditary syphilis, according to some observers, in from 60 to 80 per cent. of the cases. Acquired syphilis is considered the cause in from 2 to 10 per cent., and, next to syphilis, tuberculosis in about 10 per cent. of the cases. Still others are ascribed to various diseases in which abnormal nutritional changes are manifestly predominant.

Leber believes it is associated or preceded by disease of the uveal tract in many instances; with this opinion Bruns is inclined to agree.

Females are more frequently affected than males.

The existence of hereditary syphilis may be indicated by a peculiar formation of the face and cranium, in which the upper jaws are flattened, the nasal bridge low and often sunken, the frontal eminence prominent, and scars are sometimes seen at the corners of the mouth. The teeth of the second dentition, particularly the upper incisors, show notched edges (the so-called Hutchinson teeth). The lymphatic glands of the neck may be enlarged, being hard and painless, with no tendency to break down, thereby, differing from tuberculous enlargements, which are soft and tend to undergo caseation. Besides these, the presence of periosteal enlargements of the tibia, and deafness, emphasize the syphilitic source.

Interstitial keratitis may appear as a disciform opacity in the center of the cornea, or as an annular opacity near the limbus. In the first case, this area becomes cloudy, resembling a small macula, which spreads outward and involves the whole

* Read before the Polyclinic Ophthalmic Society. Therapeutic Gazette, Aug. 15, 1914.

cornea more or less completely. The surface appears steamy or has a ground-glass appearance, due to roughening. After a a time, newly-formed vessels are seen to be thrown out from the scleral vessels at the limbus, which advance toward the center and become so numerous as to make the cornea appear red over the affected area, or, if the cornea is very opaque, the vessels may appear salmon-colored.

If it starts near the limbus, as it sometimes does throughout the corneal circumference, it gradually advances toward the center.

In most cases the sight is so seriously impaired that the patient can barely count fingers, or, in others, see the movements of the hand before the eye. As a rule both eyes are not affected at the same time, although the second eye is ultimately involved—it may be after an interval of several weeks, months, or years. Of this the patient should be warned.

At the same time that these changes are taking place in the cornea, the patient shows marked irritative symptoms consisting of photophobia, pain, and lacrimation. Iritis or cyclitis, or other inflammations of the uveal tract, often accompany the condition. As a result of iritis, posterior synechia, seclusion or occlusion of the pupil may follow if proper treatment is not instituted early.

The disease is essentially chronic in nature and may persist for months before it finally begins to clear up. Of this the patient should be told, as naturally he later becomes impatient under treatment which seems to result in so litle immediate improvement. So, too, the impairment of sight becomes such as to greatly discourage the patient of ever being able to see. However, the prognosis which may be extended to the patient is, in the main, favorable as to the restoration of reasonably fair vision, although the cornea rarely, if ever, becomes perfectly transparent. Recovery begins by a gradual clearing of the peripheral portions of the cornea, the center being the last to clear up. In giving a prognosis, however, the possibility of impairment of vision through inflammatory changes in the deeper structures should be thought of, namely, choroiditis, optic neuritis, and hemorrhages.

The treatment of this condition is, first, local, which consists in the use of atropine to maintain mydriasis, thereby preventing posterior synechia should iritis be present, and to put the ciliary muscle at rest.

Dionin, in 2-per-cent. or 5-per-cent. solution, tends to aid in the absorption of inflammatory exudates through its lymphagogue action, and diminishes pain. This may be used early and, I think, tends to materially shorten the duration of the disease. Hot compresses are also efficient in diminishing pain. Local depletion may be practiced by leeches applied to the temples. Dark-colored glasses should be worn to protect the eye from glare.

General treatment is directed toward the underlying cause. In the majority of cases benefit is to be derived from the administration of mercury to the point of tolerance, to be followed by iodides. Probably the most efficacious mode of administration is by inunction of one dram of mercurial or blue ointment daily, preceded by sweating through the use of the hot pack. This thoroughly stimulates nutrional changes, aiding in the elimination of toxic or effete materials from the body, and, aside from those cases which show a definite syphilitic taint, aids in the absorption of inflammatory products at the inflammatory focus.

Mercury has also been used by various observers in other forms: Gray powder and the iodides by the mouth; bichloride by hypodermic and by subconjunctival injection being recommended by some.

Salvarsan is now used by some with gratifying results in many cases of interstitial keratitis of syphilitic origin, injections of from 3 to 6 grn. being given at intervals of three or four weeks until from four to six have been given, at the same time employing the usual mercurial medication during the intervals.

Vandegrift ("Medical Record," Oct. 26, 1912) reports three pronounced cases treated by intramuscular oily injections of salvarsan in which the drug worked so quickly that little connective tissue formed. In each case the corneal infiltrate was absorbed more quickly than with mercury. He recommends that it be employed early in the attack to produce these good results, as old scars show little change.

According to some other observers, salvarsan has little influence in this disease, much less than upon syphilitic manifestations in other parts of the body.

In those cases in which tuberculosis is the causative agent, curative doses of tuberculin have given good results.

It is to be emphasized that in all these cases treatment should be roborant in character, using all means in our power to increase general nutritive changes. For this purpose, arsenic, iron, and cod-liver oil are used to improve the condition of the blood, constipation and imperfect assimilation should be corrected; and the patient should have plenty of good food, outdoor exercise, and healthful surround-

ings to still further improve his condition.

After the local irritation has subsided, and when absorption is going on, the process may be hastened by one of the following means: First, by the use of dionin in 5- or 10-per-cent. solutions, instilled two or three times a day, which acts by increasing the lymphatic activity; secondly, by the use of subconjunctival injections of from 5 to 15 minims of normal salt solution, repeating them after the resulting irritation has disappeared; or, thirdly, by the use of mercuric oxide ointment, applied or introduced into the cul-de-sac and followed by massage of the cornea through the closed lids.

Iridectomy may be necessary if a dense central opacity remains, or if the intraocular tension increases and glaucoma threatens during the course of the disease.

TREATMENT OF PHTHIRIASIS CAPITIS

C. Sabatié, in "Progrès medical" advises that in pediculosis capitis without infection and inflammation, the hair should first be washed with soap, then carefully combed with a fine metallic comb frequently dipped in the following solution:

Corrosive Sublimate...grn. xv (1 gram)
Glacial Acetic Acid.....f. ʒi (4 grams)
Alcohol, (60 per cent.).....
Water.....āā f. ʒ vij
M. et ft. lotio.

Where the parasites are numerous, the hair should be moistened with 10 per cent. camphorated alcohol, compresses dipped in the same applied, and the head covered with some impermeable tissue, held by a tight bandage. This is to be done as a preliminary to the combing, on the evening preceding this dressing. The camphorated alcohol is allowed to remain in contact over night, and next morning all the adult parasites will have been killed. These procedures should be repeated three days after the first treatment, and again later if daily examination shows that the condition has not been completely eradicated.

Another method of treatment is that involving the use of xylol:

Xylol (xylene).....f. ʒii
Absolute Alcohol.....
Ether.....āā f. ʒi
Misce.

This is applied by means of a cotton swab, which is passed over the scalp and along the hair. A single application is generally sufficient. This measure is somewhat irritating, and if the scalp appears already slightly irritated, the following preparation may be substituted for that already referred to:

Xylol.....gtt. l-c
Petrolatum.....ʒiss
M. et ft. unguentum.

This preparation should be allowed to remain in contact for six or eight hours. On the succeeding days the hair should be combed with a fine comb, and if a few of the parasites have escaped destruction, the xylol-alcohol-ether mixture should be directly applied.

Where infection of the scalp exists, the hair should be cut short (in men and children) and a thick layer of petrolatum applied over the scalp, to be left over night. The petrolatum both asphyxiates the parasites and softens crusts, which are removed by washing with soap and water next morning. On succeeding days the local infection should be overcome by the ordinary methods, i. e., antiseptic sprays, lotions, and wet dressings or ointments. The following ointment may be used:

Bismuth Subgallate.....ʒss
Petrolatum.....ʒi
M. et ft. unguentum.

As soon as the inflammation has been sufficiently reduced, the xylol or sublimate-acetic treatments already described should be applied.—N. Y. Med. Jour., Sept. 12, 1914.

CREOSOTE, CALCIUM AND PHOSPHORUS IN TUBERCULOSIS

E. Brandenburg writes that in tuberculosis, creosote and its derivatives stimulate the appetite and exert a moderate expectorant action. The author uses potassium guaiacolsulphonate, as he believes it to be better tolerated than creosote. Recent investigations have shown that tuberculosis is accompanied by a relative calcium and phosphorus starvation and hence the administration of these elements is indicated.

The author employs the following formula:

Potassii Guaiacolsulphonatis.....ʒj
Calcii Glycerophosphati.....grn. xviij
Solve in Aquæ.....f. ʒxiv

Adde
Syrupi Simplicis.....
Syrupi Pruni Virg.....āā f. ʒii
Aquæ.....ad f. ʒvj

The dose is a tablespoonful twice daily for adults, and a teaspoonful twice daily for children.—Zeitschrift f. Tuberkulose.

Progress in Materia Medica and Therapeutics

ATROPINE METHYLBROMIDE IN PEDIATRICS

The advantages of atropine methylbromide over atropine sulphate is discussed by Breitman. Atropine methylbromide is a crystalline substance soluble in water or dilute alcohol and has a bromine content of 20.8 per cent. Its chief advantage is the slighter toxicity which permits of administration of larger doses. Its main indications are exudative diatheses and moist eczema of infants. In the latter condition the author employs a dose of $\frac{1}{60}$ grn., which may be increased to as much as $\frac{1}{12}$ grn. Among the complications of the exudative diathesis atropine methyl bromide is particularly serviceable in chronic bronchitis, in bronchopneumonia, and in the digestive disturbances. It is also useful in the treatment of convulsions and of the nervous manifestations of rachitic origin, particularly laryngospasm. The antispasmodic property is more pronounced than that of atropine sulphate in the treatment of ileus, mucomembranous enteritis, and sigmoiditis resulting from coprostasis. In enuresis nocturna the author administers a mixture such as the following:

Atropinæ Methylbromidi.....grn. $\frac{1}{20}$
Tinct. Rhei Aromat.....f. ʒijss
M. Sig.—Ten drops thrice daily.

Good results were often obtained in angioneurotic edema.—Pediatrija, per Med. Record, Dec. 5, 1914.

TREATMENT OF PYELITIS

During the acute attacks of pyelitis, M. Fritz combats the fever, regulates the function of the intestines, and gives large amounts of water to drink. The source of infection, he states, should be discovered and properly treated. Hexamethylenamine and its compounds may be prescribed, but usually do little good. In searching for sources of infection, intestinal catarrhs and constipation, infections of the frontal and maxillary sinuses and tonsillitis should not be forgotten. The chronic cases also demand the ingestion of large amounts of fluid but if improvement is not rapid, local treatment must be instituted. The bladder should be filled first with a solution of mercury oxycyanide, then the pelvis is irrigated with a solution of the same drug (1:2000) until the return fluid is clear. Finally, a solution of collargol (1:200) is instilled in amounts that will not cause colic (usually 5 to 10 Cc. unless the pelvis is dilated). This treatment fails only where the pus is so thick that it cannot be washed out, where the kidney itself is affected, or where, owing to anatomical conditions, free drainage is impossible.—Therap. d. Gegenwart, Aug., 1914.

SODIUM BROMIDE IN GASTRIC DISEASES

M. G. Leven extols the value of sodium bromide in the treatment of diseases of the stomach. With or without the addition of bismuth subcarbonate sodium bromide is useful in sensory, motor, and secretory disturbances of the stomach which are not controlled by dietetic measures. The author prescribes sodium bromide in those cases in which alkalies, belladonna, and opiates are frequently used. The drug is of eminent value, he states, in the treatment of hypersecretion, spasm of the cardia or pylorus, and the various ill effects of aerophagia. The dose advised is about 15 grn. in half a glass of water one-half hour before meals.—Bul. Gen. de Thérapeutique.

TREATMENT OF PULMONARY EDEMA

J. E. Talley points out that the aim should be to equalize the work of the two ventricles. The pulse tension gives the most important clue to treatment. If there is hypertension glyceryl trinitrate, 1/100 to 1/50 grain, is indicated. Dry cupping of the entire chest should be practiced; and if the condition is severe venesection should be performed, a small amount of blood being withdrawn, but as much as 400 to 600 Cc. may be removed. It may be advisable to inject with the glyceryl trinitrate morphine sulphate, 1/8 to 1/4 grain. If there is much cyanosis oxygen is useful. Atropine, 1/100 to 1/50 grain, is commonly recommended in acute pulmonary edema. The chief objection to its use has been its marked vasomotor stimulant influence, with consequent rise in blood-pressure. This effect is avoided if a large dose, 1/50 grain, is used. In patients with rapid feeble pulse and evident hypotension quick diffusible stimulants as aromatic spirit of ammonia, whiskey, citrated caffeine, camphor, and even digitalis hypodermically are to be used. In this condition atropine has not even a

theoretical contraindication. Morphine, oxygen, and the dry cupping should be used. As regards suprarenal extract, Kinnicutt and Forchheimer reported that it acted favorably, but Meltzer and others have condemned its use, inasmuch as in experimental work suprarenal extract produces acute pulmonary edema. In view of these conflicting results it would seem advisable in acute pulmonary edema to use suprarenal extract only as a last resort. Haven Emerson has recommended the use of artificial respiration if there is cardiac insufficiency. In the type of pulmonary edema associated with subcutaneous edema heart stimulants and diuretics are usually indicated. In the chronic and recurrent form the salt-free diet should be given a trial.—Musser and Kelly: "Handbook of Practical Treatment."

PHYSIOLOGY OF GASTRIC MOTILITY

By means of the local autonomous neuromuscular mechanism, Mallory states, the stomach is capable of performing its motor functions in an essentially normal manner, even when separated from the central and sympathetic nervous systems by section of both vagi and both splanchnic nerves. Normally, however, the gastric motor functions are modified by many extrinsic influences. Motor impulses, and those for increasing tonus and accelerating peristalsis, pass through the vagus nerves. These impulses are increased by mental excitement and impaired by physical exhaustion. Inhibitory influences, those for reducing tonus and retarding peristalsis, pass principally through the splanchnic nerves. These impulses are increased by mental depression and impaired by the internal secretions of the adrenals. The functions of the pyloric sphincter are under the control of conditions in the stomach, and are modified by nervous reflexes from the duodenum and small intestine.

The following agents have a sufficiently definite effect on gastric motility to be of therapeutic value; heat and cold applied to the abdomen externally; massage of the abdomen; atropine, physostigmine, pilocarpine, either by mouth or by hypodermic injection; hypophysis extract and suprarenal extract intravenously. Surgical operations performed on the stomach for the purpose of facilitating the discharge of gastric contents are sometimes only a partial success, or even an entire failure, when planned and executed in conformity with anatomic relations rather than physiologic considerations. The size, shape, position, tonus and capacity of the stomach vary under physiologic conditions. Therefore, in a gastro-intestinal anastomosis, the operation should be so performed and the stoma so situated that the discharge of gastric contents would not be hindered, but facilitated by the physiologic motility of the stomach. Gastric and intestinal peristaltic waves should run in the same direction. The stoma should be situated in the pyloric antrum, in which the expulsion of gastric contents will depend on peristalsis instead of gravity and in which it will be lowest when the stomach is nearly empty.—Med. Record, Aug. 22, 1914.

NOSE AND THROAT SYPHILIS

C. R. C. Borden, of Boston, insists on the importance of early diagnosis of syphilis in any part of the body, and speaks especially of tertiary lesions in the nose and throat, first, because these are functionally important organs, and second, because they may develop still more serious lesions in the central nervous or arterial systems. Specific manifestations in the larynx, soft palate and nasal septum are rapidly destructive and may destroy these delicate organs in a few hours. These symptoms are not necessarily limited as to the time of their appearance with reference to the initial lesions. Primary, secondary and tertiary syphilis may coexist together. The moment the lesion becomes destructive it is tertiary. In Borden's opinion the disease is commoner in these situations than is generally supposed, and his experience has taught him to be cautious in making a diagnosis until syphilis is excluded. Latent syphilis does not exist, scientifically speaking, but is a convenient term in common use when active lesions are not present. It is especially important in throat and nose practice, as operation may cause it to become active, and he believes we have no moral or legal right to perform an operation of any magnitude on the nose and throat until a Wassermann test has been made. Special attention is now being given to inherited syphilis, and as high as 30 per cent. have been found infected in children's hospitals in Boston and Chicago. These statistics have led Borden to order a routine Wassermann in every child in his clinic showing a tendency to chronic bone involvement. The Noguchi test is practically the same as the Wassermann. If these tests are dubious the bones may show certain characteristics which are distinctly syphilitic, such as periosteal thickening, dactylitis in children, etc. Syphilitic bone lesions are particularly valuable guides in diag-

nosis, since such infections are prone to give negative Wassermann tests. Perhaps not one case in three of bone syphilis gives a positive Wassermann, and Borden has seen a number of cases with a negative Wassermann yield quickly to salvarsan. Acute postoperative reactions of a syphilitic nature are not so common as might be supposed. His attention was recently called to tonsil operations in syphilitic patients, as decidedly harmful results have occurred after adenoid operations in such cases, etc., but he had not observed such himself. It seems that postoperative inflammation is not due to syphilis alone, but to a double infection, other germs acting also more readily on account of the reduced vitality. Whenever a postoperative lesion develops in the nose and throat it is well to have a Wassermann test made at once. Twenty-four hours' delay may be dangerous. At present the question of the cure of syphilis is in abeyance. Salvarsan alone is not to be relied on. Mercury must be used with it over a long period of time. Every syphilitic patient must be under observation for years after treatment before any definite opinion can be given as to the final outcome of the case.—Jour. A. M. A., Oct. 31, 1914.

TREATMENT OF BRONCHIAL ASTHMA

T. M. Martin writes that the patient should first of all be gotten into as comfortable a position as possible, either in bed or sitting in an armchair. All the windows should be opened and all close-fitting clothing, especially about the neck, should be loosened. Three grains of calomel with soda should be administered. It is well to burn in the room a powder of lobelia and stramonium with potassium nitrate. Hot compresses to the chest and back and alternate (hot and cold) hand and foot baths are useful. In the majority of cases these measures calm the breathing, but if this is still distressing it may be necessary to inject hypodermically ¼ grain of morphine with 1/120 grain of atropine to lessen the severity of the dyspnea. The morphine acts as a nerve sedative, shortening the paroxysm. The atropine diminishes bronchial secretion, probably by virtue of its sedative, vagal influence. Later a wet pack should be applied and should be renewed at the end of two hours. The action of the calomel should be aided by a large soapsuds enema. During the first twenty-four hours the author gives nothing but weak orange or lemon water and keeps the patient resting until the chest has been relieved of its superabundant secretion. The drug he prefers for this is potassium iodide. For the first week the author gives 5-grain doses every four hours in a mixture containing tincture of stramonium, tolu, and extract of liquorice. At the end of the seventh day the potassium iodide is given three times a day and is kept up for three months, this time in a mixture containing sodium bicarbonate, powdered rhubarb, magnesium carbonate, stramonium, creosote, and peppermint water. After three months this medicine is to be taken at bedtime more or less for two years, and during the day the patient should receive a tonic containing dilute hydrochloric acid, arsenic, and strychnine. He is instructed to eat slowly, and if not hungry to partake only of distilled water or fresh fruit juices until hunger reappears; and to avoid table salt, except a very little in the cooking of foods. It may be necessary to establish free nasal breathing and to calm respiration by general massage.—Clin. Jour. per Med. Record, Nov. 21, 1914.

LUMINAL IN EPILEPSY

Luminal was first recommended in stages of excitement and in insomnia, but it was soon found that it possesses quite a specific effect in epilepsy, and numerous publications have already convinced the medical profession of its real value in this disease. One of the latest contributions is by H. Grabi who fully shares the enthusiasm of his colleagues. The drug was first used in place of hyoscine in doses of 0.8 Gm. (8 grn.) or less, in the severe stages of excitation, later it was tried in the routine treatment. In a large percentage of cases 0.2 to 0.3 Gm. (3 to 5 grn.) daily prevented the epileptic seizures. This treatment was usually continued in the institution for four to five months, when the patients were discharged considerably improved. A complete cure was not observed, but the intensity and frequency of the attacks were considerably reduced and a pronounced improvement was noticed in the psychic condition. One severe case is mentioned in detail, where the attacks recurred with remarkable frequence and a progressive mental deterioration was very apparent. Luminal was given in doses of 0.1 Gm. (1½ grn.) in the morning and 0.2 Gm. (3 grn.) in the evening. There now followed weeks during which there was not a single attack. More remarkable still is the fact that the extremely irritable and aggressive patient became docile and even cheerful and could be induced to occupy himself, though the mental weakness did not change. After six months, an attempt

was made to discontinue the treatment, but the old condition immediately returned, so that luminal was again given, with the same beneficial effect. Though the patient had a slight nephritis, the amount of albumin was not increased nor were there any other after-effects. In a second case, the drug was given almost continuously for two years and though a nephritis was also present here, it was in no way aggravated. With luminal, the patient is able to lead a comfortable existence, without it, constant supervision was imperative.—Muenchener med. Woch., Aug. 4, 1914.

TONSILLAR INFECTION

N. L. Wilson, of Elizabeth, N. J., thinks that physicians do not sufficiently emphasize the seriousness of tonsillar infection, which, he thinks, is one of the most frequent causes of nephritis, rheumatism and other diseases. Several cases are reported in which this source of infection seems evident. In one of his cases he gave calcium lactate, before removing the tonsils, for the relief of the rheumatic trouble. The idea was to make the blood clot more rapidly and avoid hemorrhage. He says that we have proved conclusively by the aid of the Biffi-Brooks coagulometer that the ordinary blood-clotting time of this instrument is seven minutes in the adult. This has been reduced to one minute after the administration of 120 grn. of calcium lactate. It must be given in from 10- to 15-grn. doses three times a day for three days before operation to decrease the blood-clotting time. If a general anesthetic is given there may be as much hemorrhage as usual during the operation, but it is much more easily controlled and much less likely to recur.—Jour. A. M. A., Nov. 7, 1914.

DIPLOSAL IN POLYARTHRITIS

According to Kukulus the value of diplosal has not been sufficiently recognized. The first case treated by the author with diplosal was that of a severe, acute polyarthritis due to a streptococcus infection. After three days the coating of the tongue had disappeared, the fever dropped and the appetite returned. The local symptoms also subsided so that the patient was fairly advanced in convalescence after three weeks. Since then, the author has used diplosal continuously, especially in acute, rheumatic polyarthritis. In the subacute form, without edema, the effect is not so prompt, but excellent results are the rule in the acute types of myositis, in rheumatic neuralgias and in dry pleurisy. The development of an endo- or pericarditis was never observed while diplosal was given, but wherever present it may be cured by the drug, as was demonstrated in a case of pronounced mitral insufficiency.

Chemically, diplosal is the salicylic acid ester of salicylic acid itself, and one part corresponds to 1.07 parts of free salicylic acid as it breaks up into two molecules of the acid by hydrolysis in the small intestines. As a consequence, the stomach is not affected and the appetite returns rapidly. Disagreeable perspiration, the author states, does not occur and after-effects on the part of the vital organs were not observed. Palpitation of the heart and buzzing in the ears are rare. The dose generally recommended is one to two tablets three times daily; this may be reduced to one-half during convalescence. The author uses diplosal as a prophylactic for colds. It is possible, he states, to suppress the coryza without going to bed. With other salicylic acid compounds this is often impossible owing to the profuse perspiration.—Therap. d. Gegenwart, Aug., 1914.

PRACTICAL EXPERIENCE WITH LUMBAR ANESTHESIA

The present, restricted use of lumbar anesthesia is due to the difficulty of the technique and the possibility of complications either during or after operation. At the clinic of G. F. Roerer, the method has been highly perfected, and the author presents the following summary of the results he obtained during the past year. All in all, 1223 cases were operated under this anesthesia, including many vaginal and abdominal operations lasting over one hour. Patients suffering from spinal disease, syphilis, severe tuberculosis and tendency to headache and conditions of excitement were excluded. Anesthesia was complete in 272 cases, for over forty-five minutes, with stovaine in 76.7 per cent.; with tropacocaine in 66 per cent; while it lasted less than fifteen minutes with stovaine in 5.8 per cent. and with tropacocaine in 10 per cent. In the succeeding 500 cases, the figures for stovaine were 86.6 per cent. and 6.5 per cent., and for tropacocaine 85 per cent. and 1 per cent. In the latest series, a 5 per cent. solution of tropacocaine in 0.6 per cent. saline as supplied by Merck in ampules of 1 Cc. was employed exclusively. An hour before operation, the patient receives morphine 0.015 Gm. (¼ grn.) with scopolamine 0.0004 Gm. (1/150 grn.). The puncture is performed between the second and third lumbar vertebrae and in ten minutes

the anesthesia is usually complete. Perfect results were obtained in 89.54 per cent., while the anesthesia lasted between thirty and forty-five minutes in 1.43 per cent., between fifteen and thirty minutes in 2.24 per cent. and less than fifteen minutes in 6.76 per cent. The most frequent disturbance during operation was nausea and vomiting (7.8 per cent.), rarely were there more serious effects such as marked excitement and asphyxia. The most frequent post-operative symptom was headache (1.4 per cent.); other very rare sequelae were paralysis of the abducens and transient psychoses. The method is most highly recommended.—Muench. med. Woch., September 8, 1914.

PROGNOSIS OF ARTERIOSCLEROTIC HEART DISEASE

According to G. Klemperer, three stages of arteriosclerotic heart disease may be recognized. 1. The early stage, with pains over the heart, usually of medium intensity and often neurotic symptoms. There is generally accentuation of the second aortic sound with frequently a systolic murmur at the base without enlargement of the heart. Slight irregularity of the pulse is not rare. The accentuation of the second sound may be due to presclerotic neurasthenia and may thus be a purely nervous symptom, though it generally persists in elderly individuals. In the second stage, there is dilatation of the heart and often a diastolic murmur and dilatation of the ascending aorta. Irregularities of the pulse are frequent, but true angina pectoris does not occur. The prognosis is still relatively favorable. The last stage is characterized by insufficiency of the heart, with cardiac asthma and edema and attacks of angina pectoris. The prognosis here is grave, particularly if the latter attacks are accompanied by intense pain and feeling of dissolution, small pulse and cool extremities. Rare cases are on record where the patients lived five to nine years after their attacks. Pulsating, aortic aneurysm is also a grave symptom. The prognosis also depends to a great extent upon the complications. Arteriosclerosis of the peripheral vessels is of less consequence and such symptoms as intermittent claudication may even disappear. Apolexy, if slight, may be survived by many years. Vertigo may be purely functional or may be due to excitement, constipation or smoking. Ringing of the ears is not of special significance. Conditions of anxiety are grave only if accompanied by other disturbances of intelligence. The condition of the kidneys is of importance, for a pronounced granular atrophy will often lead to uremia. Intestinal arteriosclerosis may lead to intestinal hemorrhage or paralysis, while that of the pancreas may give rise to severe diabetes. The prognosis is better, if it is possible to remove the cause at an early period of the disease, or if active treatment is possible, as in syphilis. Excellent results may often be obtained from the alternating use of small doses of iodides and arsenic. The latter acts especially well, where there are headache, vertigo and conditions of fear.—Therap. d. Gegenwart, July, 1914.

TREATMENT OF SCARLET FEVER

I. L. Van Zandt, of Fort Worth, Tex., writes that he has obtained excellent results with unguentum Credé in the treatment of scarlet fever. He points out that the method of administration is very important. For adults he usually directs that from one-quarter to one-half ounce be thoroughly rubbed into the skin once or twice daily. When the skin is hot and dry the ointment penetrates rapidly. When the skin is cool and moist he prefers to administer 10 to 15 grn. of collargol as an enema in a cup of warm water.—Charlotte Med. Jour., Sept., 1914.

CONSTITUTIONAL OBESITY AND INTERNAL SECRETION

According to the experience of L. Roemheld, the female sex is prone to suffer from obesity with diminished metabolic energy. The women who are affected are of a pasty, bloated type, usually in the preclimacteric period, and though they deliberately underfeed, they still put on weight. Women who have had their ovaries removed, and presumably therefore are under some abnormal sexual influence, constitute a special type.

In such cases, benefit has been derived from an exclusive milk diet for a number of days, and also from a diet which contains no salt, continued over a long period. As a rule, dietetic treatment alone does not bring adequate relief, nor does treatment by movements or other physcial methods.

Organo-therapy remains the only resort. The author repeatedly witnessed good results from ovaraden-Knoll, in combination with triferrin, even after the failure of other ovarian preparations. The reason for the superiority of the preparation over other ovarian preparations does not appear to be clear. That there is any variation in the action of different preparations of the same organ may be due to the fact that these preparations should only contain the constituents of the organ of which the

extract is made, and should not contain any of the chemical substances employed in making the extract. The author details a series of observations wherein women regularly lost weight as a result of the administration of ovaraden, after the failure of all other methods. Corresponding trials with spermin preparations, in the case of males, had no effect.—Med. Klinik, 1914, No. 6.

SERUM TREATMENT OF SYPHILIS

The history of the intraspinal treatment of syphilis of the nervous system is reviewed by H. S. Ogilvie, of New York, who notices the experiments that have been made which show the difficulty of the introduction of spirocheticides in the treatment of syphilis, so as to reach lesions in the nervous center. He refers to the experiments of Dandy and Blackfan, and Tilney and Woolsey, showing the difficulty of reaching the nerve centers by intravenous injections of salvarsan, and the necessity of subarachnoid therapy in diseases of the nervous centers. Swift and Ellis have given us the proper method of treating syphilis by the intraspinal method. The trials of neosalvarsan intraspinally have not given very favorable results, and Ogilvie thinks that it is too dangerous to be generally used. He describes his own method which he has used in 200 treatments. When he first started, he employed 15 Cc. of undiluted serum as a vehicle. But more recently it has been found that 30 Cc. of a 50 per cent. solution of serum in normal salt solution is more practical for the purpose. Points specially emphasized in his technic are the use of only the exact amount required of sodium hydroxide to very faintly alkalinize the solution, testing with litmus paper, and adding the sodium hydroxide rapidly; and also the importance of having the temperature of the salvarsan and the serum the same when the two are mixed. Under no circumstances, he says, should a serum be used that is more than three hours old. In the cases he reports, a total of seventy-five treatments were given, and the reactions observed were chiefly in the form of root pains in the lower extremities. These constituted about 50 per cent. of the treatments, and varied markedly in intensity. They were invariably more marked in tabetics in whom lightning pains had been a prominent symptom. In one case as high as 4.0 Mg. were given at a treatment, and in other cases a dosage of 3.0 and 3.5 Mg. He would, however, particularly emphasize the importance of keeping the dose under 1.0 Mg., as such doses were well borne and the clinical improvement was more marked than when larger doses were used. For repeated doses, from 0.25 Mg. to 0.5 Mg. is the safest and most effectual. Fifteen cases are reported in which he used salvarsan by the Swift and Ellis method. In every case the Wassermann reaction in the blood and the cell count, globulin in content and Wassermann of the spinal fluid were reduced to a greater or less degree; and in the majority there was a concomitant clinical improvement. As to the permanency of the improvement, it is too early yet to draw any conclusions, but it seems reasonable to him to believe that those who responded favorably to the treatment can be controlled, with proper supervision and attention.—Jour. A. M. A., Nov. 28, 1914.

PLEURAL AFFECTIONS

In the presence of a purulent exudate, most authors are agreed upon resection of a rib, though a few cases will heal spontaneously, and in young children removal by suction may be sufficient. Where the radical operation is not performed, perforation into a bronchus may occur and the lesion may be mistaken for a bronchiectatic cavity. Strong adhesions are not rarely the final result of an empyema. These are best treated, according to Hofbauer (Therap. Monatshft, Aug., 1914), by means of respiratory gymnastics and fibrolysin.

COLLOIDAL STRYCHNINE

H. McGuigan, of Chicago, defines colloids and their nature, and gives types of irreversible and reversible changes which they may undergo, defining the terms sol and gel, if used for these substances. Various facts indicate, he says, that colloidal solutions are not true solutions, but more in the nature of suspensions of fine, minute particles of one form of matter or another. The solid particles are separated so that they cannot come into cantact with each other, and this is known as the disperse phase. When they touch each other, it is called the continuous phase, and all colloids are made up of these two. He explains their protective power by the suggestion that has been made that they afford an insulation, protecting organic substances from precipitation by electrolytes. Two classes are recognized, suspensoids and emulsoids. Of the latter, serum may be regarded as a type. A relatively great concentration of an electrolyte is required for their precipitation, while a trace precipitates a suspensoid. After these preliminary remarks, he describes Lloyd's reagent, essentially hydrous aluminum silicate used for the separation of colloids,

and his experiments as to the properties of colloidal strychnine thus separated. This colloidal precipitate acts very much like strychnine diluted with an inert substance, and it has the typical property of delaying and lessening the effect of strychnine, as shown by the tabulated results of his experiments. By comparing the two tables given, we find that where 1/50 Mg. of the pure strychnine produced tetanus in dogs in about an hour, the same amount in colloidal form was without effect, and four times as much is required to produce the tetanus. The difference is undoubtedly due, he says, to a retarding absorption, which can be lessened to such an extent that the rate of excretion may be merely equal to the rate of absorption. His conclusion is: "The action of strychnine when combined with Lloyd's reagent is retarded. In this respect the reagent modifies the action in a manner similar to other colloids. The combination is broken up in the body and the typical strychnine action exerted. The toxicity of the alkaloid is somewhat lessened owing to delayed absorption, but the main effect is retarded action."—Jour. A. M. A., Nov. 28, 1914.

VALVULAR DISEASE IN INFANCY AND CHILDHOOD

R. Abrahams, of New York, lays down the following rules to be observed in the treatment of valvular disease in infancy and childhood:

In acute or subacute endocarditis, push the salicylates to their utmost physiological limit.

In acute or subacute endocarditis, keep the child in bed for three or four months. The prolonged stay in bed gives the heart a chance to recuperate, and the valves an opportunity, for aught I know, to recover.

When the lesion becomes chronic, prevent the recurrence of arthritis or tonsillitis, by proper dress, hygiene, outdoor life, and suitable antiseptic gargles.

Nutritious food—more vegetable and less animal and all well seasoned with common sense.

Good habits: Early to bed and late to rise.

Warm baths—the more the better.

Avoidance of tea and coffee. Children should not be permitted to take these beverages on general principles.

When compensation is good, avoid all cardiac drugs.

When compensation is failing, put the patient to bed and give digitalis in mitral insufficiency and caffeine sodium benzoate or the tincture of strophanthus in stenosis. The tincture of digitalis is standardized and, therefore, reliable. The infusion is good when it is properly prepared of English leaves, but the tincture is preferable. If digitalis is indicated, it means that only large doses will benefit the patient. Give from ten to twenty minims to a child eight or ten years old. As symptoms improve, the dose can be reduced, but it must be continued. A larger dose than this should be given in the terminal stages.

Digitalis should be given in mitral stenosis under two conditions; in marked dilatation or auricular fibrilation.

In case digitalis is not well borne as evidenced by heart block, or thready and irregular pulse, or retching and vomiting, or fainting spells, then resort should be had to the tincture of strophanthus in half the dose of the tincture of digitalis.

Every patient who must take digitalis must take calomel, at least one grain twice a week.

Chronic valvular disease demands continuous administration of iron. Generally speaking iron is more important than digitalis.

Keep the bowels open.

Most important in all forms of treatment are: Correct diagnosis, a cool head, and a confidence born of a modest assurance that the right thing done at the right time will insure success.—N. Y. Med. Jour., July 18, 1914.

TREATMENT OF PLEURAL AFFECTIONS

The study of the pathogenesis of various respiratory affections within recent years has had considerable influence upon our treatment.

Thus in pleurisy with effusion, an exploratory puncture is first of all indicated. The presence of a serous exudate would demand an active search for tuberculosis. It is possible that an encapsulated focus of pus is present even where serum was withdrawn and that the condition may be secondary to pulmonary abscess or gangrene. The appearance of an exudate may often be effectually prevented by giving calcium salts in large doses. If already present an attempt may be made to induce absorption by means of salicylates, hot air baths and a Karell cure. The last traces of exudate will often disappear if the patient lies on the affected side and breathes deeply, using the abdominal muscles. Frequently, autoserotherapy is in place. A small amount of fluid is withdrawn and injected subcutaneously. Permanent drainage into the intracellular tissue is also practiced by drilling through a rib.

The removal of the fluid by puncture and suction is often necessary. It is

indicated in the early stages of tuberculosis, but should be avoided in the advanced stages. Some authors recommend the injection of iodoform glycerin or adrenalin, others irrigate with saline or salicylic acid solution. To avoid adhesions, it has been suggested to inject a small amount of olive or paraffin oil.—Therap. Monatshft.

BENZOL IN LEUKEMIA

Benzol is superior to arsenic in the treatment of leukemia and is especially indicated where the Roentgen rays or thorium are not available. N. D. Liberon points out, however, that the drug should only be used when the patient can be carefully watched and the urine and blood can frequently be examined. The administration should never be continued until the nubmer of whites has reached the normal, as an aplasia of the blood-forming organs may result. Small doses (30 to 45 minims daily) should be preferred and sometimes 15 grn. is sufficient. The effect on the red cells is not pronounced and often the number of red cells and the percentage of hemoglobin will even increase. In most cases treated by the author, the subjective symptoms improved and the liver and spleen decreased in size, showing that the effects of the drug are not limited to a destruction of only the white elements in the circulating blood.—Therap. Monatshft., May, 1914.

FORMALDEHYDE DISINFECTION

Samuel G. Dixon, remarks that the Department of Health of Pennsylvania, in experimenting with substances that would take the place of potassium permanganate for liberating formaldehyde gas from a water solution for the purpose of disinfecting, found that sodium dichromate, in the presence of sulphuric acid, gave results in every way comparable with those with potassium permanganate. The following formula was determined: Sodium dichromate, 10 oz. avoidupois. Saturated solution of formaldehyde gas, 1 pint. Sulphuric acid, commercial, 1½ fluidounces. The sulphuric acid and formaldehyde gas form a stable solution. After it cools it should be poured over the crystals of sodium dichromate, spread out in a thin layer over the bottom of a vessel having ten times the capacity of the volume of ingredients used. It was found that the process was more rapid than with potassium permanganate. It was found also that the two methods were equally effective from the quantitative point of view.—Jour. A. M. A., Sept., 19, 1914.

TREATMENT OF DYSPNEA IN PULMONARY TUBERCULOSIS

A. Robin refers to the dyspnea sometimes appearing in tuberculosis without apparent cause, at other times after fatigue or excessive eating, or again, at the menstrual period. The temperature rises somewhat, expectoration is abundant, and the sputum is often streaked with blood. Percussion causes a little pain at the site of the disease focus, and auscultation reveals an area of blowing respiration with fine or moist rales. The patient, if constipated, should be given 5 to 8 drams of castor oil. Leeches may be applied to the base of the thorax on the affected side. Next day a mustard foot bath should be taken. Revulsion should be effected over the focus itself by means of mustard poulticing,. dry cupping, or even small blisters two inches square. The following should be ordered:

Quininæ Sulphatis ..... grn. iv
Ergotæ Pulveris ..... grn. iss
Opii Pulveris ..... grn. ss
M. et pone in cachetam No. i.
Sig.: One cachet to be taken morning and evening.

There should also be taken four or five times in the twenty-four hours a cachet made up as follows:

Scillæ Pulveris .....
Digitalis Pulveris .....
Ipecacuanhæ Pulveris ..... āā grn. ¾
M. et pone in cachetam No. i.

As soon as streaks of blood in the sputum have entirely disappeared and local signs of congestion have diminished, both varieties of cachets should be discontinued. Quinine sulphate, however, should be taken alone a few days longer.—N. Y. Med. Jour., Nov. 7, 1914.

Chronic Prostatitis:

Iodoformi ..... grn. j
Morphinæ Sulphatis ..... grn. ¼
Olei Theobromatis ..... grn. xxv
M. f. suppos. No. 1. Tal. dos. No. xij.
Sig.: One suppository t. i. d.

Potassii Iodidi ..... grn. ij
Iodi Puri ..... grn. ¼
Morphinæ Sulphatis ..... grn. ¼
Olei Theobromatis ..... grn. xxx
M. f. suppos. No. 1. Tal. dos. No. xij.
Sig.: One suppository t. i. d.

Ichthyolis ..... grn. ij
Potassii Iodidi ..... grn. iij
Morphinæ Sulphatis ..... grn. ¼
Olei Theobromatis ..... grn. xxx
M. f. suppos. No. 1. Tal. dos. No. xij.
Sig.: One suppository t. i. d.

Bism. Iodo-resorsin-sulphonatis grn. ij
Zinci Oxidi ..... grn. v
Olei Theobromatis xxv
M. f. suppos. No. 1. Tal. dos. No. xij.
—W. J. Robinson.

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DECEMBER, 1914

EDITOR'S NOTES

Rational Treatment of Syphilis

There are few other diseases in which such brilliant therapeutic results can be obtained as early syphilis. Despite the many advances made in recent years in the study of this disease, it is greatly to be regretted that the average physician still lacks the courage to attack this scourge with sufficient energy to make abortive treatment possible. Only too often the patient is given pills to swallow, with the result that the spirilla become mercury fast and continue their destructive work, or else several salvarsan injections are given, over long intervals, in the fond hope that a complete sterilization of the body is possible with this drug. More often, a proper therapeutic start is made, but the patient stays away owing to an absence of symptoms or else the physician fails to properly control the case with blood-tests and stops before his task is half finished. Fortunately, the days are passed when we considered it our duty to await the appearance of the second stage before beginning treatment; it is now well known that valuable time is lost in this way, for a general invasion of the body both by the lymphatic and blood-stream occurs long before this. It is claimed by many physicians that the treatment should really be left to specialists, yet the common occurrence of the infection in those with moderate means who are quite unable to pay large fees for a long time, makes it absolutely necessary that the general practitioner familiarize himself with treatment such as is considered effective to-day.

Active treatment should be begun as soon as the diagnosis of syphilis has been made. Repeated salvarsan injections will be necessary, and it is best to give four to six intravenous injections in as many weeks. It is probable that neosalvarsan is not as effective, though if given in a syringe dissolved in a small amount of water (10 Cc. for 0.9 Gm.), its application is extremely simple. An interesting fact brought out at one of the hospitals in this city, is that small doses (such as 0.2 Gm.) are as effective as larger ones. We do not know to-day if salvarsan acts as spirillocide by virtue of its peculiar construction or as a result of the arsenic it contains, or if the drug merely stimulates the body to form antibodies to destroy the invaders.

At the same time that salvarsan injections are made, mercurial treatment should be begun, so that we are continuously fighting the foe with two weapons. One course of treatment would thus constitute four to six salvarsan injections given at the end of the week and twelve mercurial injections given in the middle of the week. The popular mercurial preparation is the salicylate of mercury emulsion, given deeply into the gluteal region. An excellent formula is the following:

Hydrargyri Salicylatis	grn. xcvj
Camphoræ	grn. xij
Creosoti	gtt. x
Adipis Lanæ	℥ iij
Olei Paraffini	ad ℥ ij

The mercury salt is mixed with the adeps lanæ and the camphor dissolved in the liquid paraffin, which is then slowly added to the adeps lanæ. Finally, the creosote is incorporated. The advantages of this emulsion, which may be made 20 per cent. if desired are that it keeps well, does not require much shaking and readily flows even through fine needles.

It is wise, at the conclusion of the treatment, to order a Wassermann reaction. In cases seen early, where the reaction was still negative and a general invasion of the body had not yet occurred, a permanent cure may now have been accomplished. At all events, a negative Wassermann calls for repeated tests once a month for the first six months, every second month for the second six months and three or four times during the second year. In all probability, the disease has been eradicated if the reaction remains negative during this time, though it is advisable to test the cerebrospinal fluid (cell count, Wassermann, butyric acid, gold and potassium per-

manganate tests) before discharging the patient and perhaps giving consent to marriage, so as to guard absolutely against later surprises in the form of locomotor ataxia or general paresis. It is regarded as possible by many that there is a special "nervous" type of spirocheta pallida which has a more pronounced affinity for the cerebrospinal system, and as it is not readily reached by the main blood-stream is often not affected by the treatment.

Should the first Wassermann test after the outlined, intensive treatment be still positive, it would be advisable to repeat the treatment, both with salvarsan and mercury with little or no intermission unless the patient shows the effect of the drugs, when if his means allow it, he should sojourn for a short time at some suitable watering place such as Hot Springs. The treatment outlined is thus no longer arbitrary, but based on strict, scientific principles.

More difficult problems are presented by the later secondary and tertiary stages. The same treatment, with the liberal use of the iodides, is in place, but, as it is apt to be long-continued, intermissions of several months between each course are necessary, irrespective of the result of the serum test. Abortive treatment is no longer possible, and it is even doubtful if a cure can be accomplished.

When the blood serum shows a negative reaction and the cerebrospinal fluid a positive reaction, irrespective of the presence or absence of symptoms, or where signs of tabes or paresis are already present, the method of using salvarsanized serum should be resorted to. Briefly, this is as follows: 0.6 Gm. of salvarsan is given intravenously the usual way. In three-quarter to one hour 40 Cc. of blood are withdrawn, allowed to clot and then 12 Cc. of the clear serum removed. This is mixed with 15 Cc. of saline solution and inactivated for one-half hour at 56° C. Lumbar fluid is then withdrawn (15 to 18 Cc. or until the fluid drops out at the rate of one drop every three to five seconds) and the diluted serum is slowly injected (about twelve minutes). The patient is instructed to keep perfectly quiet on his back for twenty-four hours with the foot of the bed moderately elevated. It is surprising to see how frequently the knee-jerk returns and the ataxia and weakness improve in early cases of tabes after repeated injections of this kind.

Those who have seen much syphilis, are already of the opinion that the disease runs a milder course since the introduction of Ehrlich's remedy. It is to be hoped that the energetic treatment, if more universally applied, will greatly increase the percentage of abortive cures and will finally eradicate altogether those dread diseases, tabes and paresis. With it all, however, our main task will lie in the direction of prophylaxis. The physician of to-day is not rarely called upon to point out the horrors of the disease to the offspring of his patients nearing adolescence, and he can do much to take the initiative in this matter and point out the value of early treatment if damage is already done.

***

Combined Use of Adrenalin and Pituitrin

Recently, several experimental studies have appeared which show that there is considerable therapeutic advantage in the combined use of suprarenal and pituitary extract. Adrenalin alone, if injected intravenously has only a transient effect and the blood-pressure may subsequently even fall below the original figures. If used subcutaneously, a local contraction of the vessels will occur, so that only minimal amounts are absorbed, while probably about 94 per cent. will be decomposed before absorption. This will explain why large amounts can often be given daily for weeks in this way with impunity.

It is a well-known law of pharmacology that the use of two drugs of different chemical composition but of the same pharmacological effect will exhibit a more potent action, than where either drug alone, in the corresponding dose, is employed. This also applies to extracts of the suprarenal gland and the hypophysis. It is thus possible to use with much less adrenalin and the blood-pressure will sink less rapidly.

These experimental observations have been confirmed on clinical material by P. Rohmer (Münch. med. Woch., June 16, 1914). The cases on hand were chiefly children suffering from severe circulatory disturbances, as a result of pneumonia, diphtheria and typhoid. The dose for young children was 0.25 Cc. of a 1:1000 solution of pituitrin with 0.5 Cc. of a 1:1000 solution of adrenalin; older children will readily tolerate twice the amount. As a rule, this dose was given every six hours, with caffeine and camphor in the interval. In some of the cases treated in this way successfully, there had been a decided collapse and death seemed inevitable. A steady control of the pulse-rate and blood-pressure is desirable to determine when to repeat the injection, but as a rule the effect persists for six to seven hours. In some of the pneumonia cases, camphor alone was ineffectual and the value of adrenalin-pituitrin were very apparent.

Of General Interest

The best thoughts from our contemporaries on general medical and allied subjects

Rectal Aerophagia.—This curiosity of medicine is exemplified in the case reported by Taillers in the "Archives des Maladies de l' Appareil Digestiv et de la Nutrition," January, 1914. The patient was a nervous, impulsive girl of fifteen years, in whom an extreme flatulence was found to be caused by the habit of rectal aerophagia. The girl would assume the genupectoral position, in which the intestines would gravitate toward the upper part of the abdomen. The resulting vacuum in the lower abdomen and in the pelvis would create suction. At the same time there would occur an active relaxation of the anal outlet. As a result air would be sucked into the anus, thus completing the phenomenon of rectal air-swallowing. The author states that the same practice is sometimes indulged in by European soldiers as a pastime or game while they are off duty in the barracks or in camp. In this martial sport the winner is the one who at the greatest distance can blow out the flame of a candle by means of the air expelled from the rectum!—Med. Record.

The Proper Dosage of Diphtheria Antitoxin.—Some studies of Schick, according to "The Journal of the American Medical Association," of December 12, "seem to be of such practical importance for the every-day work of general practitioners as to make it desirable that every physician should become acquainted with them."

Careful observation showed that the main effect of the antitoxin is one of immunization—that is, a suitable dose of antitoxin renders the individual immune to a dose of toxin administered later. On the other hand, even a large dose of antitoxin has but slight effect on the action of toxin injected previously. To be sure, there is some effect on toxin introduced from three to six hours before the injection of antitoxin, and in exceptional cases an enfeeblement of the effect of the toxin introduced nine hours before the antitoxin was given; in other words, the main effect of antitoxin injection is to protect against toxin acting after the antitoxin is introduced. Further observations showed that a maximal antitoxin effect is obtained with a dosage of 500 units per kilogram; larger doses have no greater influence, either on simultaneously injected toxin or on toxin injected twenty-four hours afterward. The retroactive effect on toxin injected three hours earlier is very slight even when 500 units per kilogram are given, and such large doses have only a slightly better effect than doses of 100 units per kilogram.

In the treatment of human diphtheria, therefore, Schick and his colleagues recommend (1) that the injection be given at the earliest possible moment; (2) that it be given intramuscularly; (3) that in all mild and medium cases of diphtheria (and these make up about 90 per cent. of all cases) a single dose of 100 units of antitoxin per kilogram suffices, and (4) that in the severest cases 500 units per kilogram may be injected. In other words, in a child weighing 20 kg. (or 44 pounds), 2,000 units will, in 90 per cent. of the cases, suffice, while in 10 per cent. of the cases of the most severe type a dosage of 10,000 units may be given. In an adult weighing 60 kg. (or 132 pounds), a dose of 6,000 units will suffice in all the ordinary cases, whereas in the severest cases a single dose of 30,000 units may be given.

One of the most important of Schick's observations is that repeated injections of the serum are superfluous and not warranted. Even in the severest cases, he asserts that if a dose of 500 units per kilogram be injected immediately the greatest good possible will be obtained. Subsequent injections of antitoxin after six, twelve or twenty-four hours are, he maintains, unnecessary, for any further effect of toxin is prevented by a single dose of the size mentioned. If the diphtheria patient dies, it is because the toxin elaborated by the organisms in his body has had time to act before the antitoxin was injected, and cannot by any means as yet known to us be afterward inactivated. The only circumstance in which a second injection is of value is when the first injection given has been smaller in dose than the optimal doses recommended; then one may give a single dose of 500 units per kilogram.

In persons exposed requiring an immunizing dose, a single injection of 50 units per kilogram is sufficient.

If the conclusions drawn by Schick and his colleagues from these interesting studies be correct, it is obvious that the practitioner will, from now on, be provided with a precise method of treating diphtheria patients hitherto much desired.

Radium in Dermatology.—A. F. Holding, of New York, says that for two purposes one must acknowledge that radium has greater possibilities than any other similar agent used at present, namely: (1) in diseases of faulty metabolism in which the radium emanatorium may be used; (2) in malignant lesions of cavities where the neoplasm is inaccessible or difficult to expose to direct application of Roentgen rays, such as the esophagus, rectum, vagina, urinary bladder and fauces. Its use for benign growths, he thinks, is unnecessary, since they could be more quickly controlled with less expense by the electric desiccation method of Clark, or massive doses of the Roentgen ray. One fact in its favor is that the most penetrating Roentgen rays in use represent the output of from a 60,000- to 100,000-volt current, while it is estimated that from 600,000 to 1,000,000 volts would be needed to produce Roentgen rays of as great penetration as the most penetrating radium rays. With the use of the new Coolidge tubes more success can be expected in the future, Holding says. Since the employment of radium emanations by the use of capillary glass tubes its field of usefulness has been greatly increased. Radium treatment in any case is the most costly, but other things being equal, radium is more easy to apply than any other agent. It also consumes more time, but like the Roentgen ray and ultraviolet ray, it is painless and gives the best cosmetic effects. In superficial skin conditions other methods are generally more available. Psoriasis, eczema and skin diseases due to faulty metabolism should be treated first by systemic measures, including radium emanations if available. For deeper and malignant conditions of the skin the following therapeutic program should be adopted: "1. Massive Roentgen deep therapy or massive radium deep therapy. 2. Complete radical operation, preferably by bloodless methods, such as thermopenetration, electrocautery or massive caustics (Stroebel). 3. Effulguration (de Keating-Hart) into the wound. 4. Postoperative Roentgen deep therapy or massive radium deep therapy. In hopeless malignant skin conditions the patient's symptoms can frequently be much ameliorated by massive deep roentgenotherapy or radiotherapy."—Jour. A. M. A., Aug. 29, 1914.

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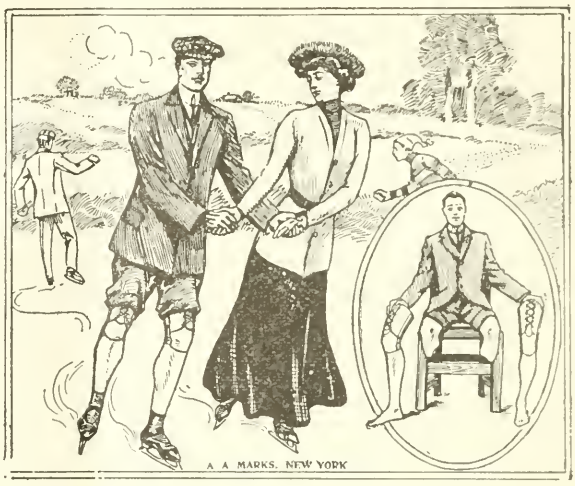

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The Old Joke Redecorated

Betty was milking the cow when the mad bull tore over the meadows. Betty did not stir, but continued milking. Observers who had run to safety saw to their astonishment that the bull stopped dead within a few yards of the maid and cow, and turned round and went away sadly.

"Weren't you afraid? Why did he run away?" asked everyone of Betty.

"He got scared," said Betty. "This cow is his mother-in-law."

SINGEING THE HAIR.—"The reams of paper that are used up each month in articles in the daily papers—and weekly and monthly papers—on beauty culture is conclusive evidence," "The Journal of the American Medical Association" believes, "that it is as natural for man to desire to beautify the person as it is 'to indulge in the illusions of hope.' A sound mind in a sound body suffices the serious-minded minority, but apparently the innumerable majority, if they had their way, would have a comely body and take their chances on any old kind of a mind, on the principle that it is better to be good looking than wise, because more people have sight than understanding. To decorate and beautify the body is an inborn passion; the savage does it differently from us, but when it comes to the many manipulations and remedies that are recommended for avoiding wrinkles, giving the eyebrows an aristocratic arch, coaxing the lashes to be long and languorous, making the ears pink and small or the nose straight and thin, removing a double chin or taking the core out of the Adam's apple, we have nothing on our uncivilized and supposedly more ignorant brothers. The hair in particular is the object of all mankind's cosmetic endeavors. When it comes to civilized man he is universally engaged in trying to save what he has left or regrow what he has lost. Women, with few exceptions, do not become bald, but all women, in their opinions, are threatened with that unspeakable calamity; men not only may get bald, but a large number of them are already so. And thus the popular remedies for the hair need almost a surgeon-general's catalogue. Vibratory and electrical treatments, hair tonics that feed the hair roots, as though they grew out of the scalp like broom-sedge out of an old field, neat's-foot oil and crude kerosene, massage and mange cures, all have their futile trials. Among these our particular topic now is singeing the hair. This is recommended to overcome splitting at the ends and to prevent falling of the hair, the reason for the latter being that it 'closes the pores and keeps the fluid in the hair.' With the long hair of a woman which has a tendency to split at the ends, it is possible that singeing the tips may be of some use; it substitutes a charred, blunt end of fused horn for one tapering to a point or cut clean across. But even in cases of this sort it is less useful than greasing lightly the hair and thus supplying the fat which is lacking in such hair. For the hair of men, which is kept short, singeing is not of any use in preventing splitting; hair which is not allowed to grow to its natural length does not split, unless it has a deep-seated disdisturbance for which there is no such simple remedy. Of course singeing the hair-ends in order to prevent the fluid in the hair from escaping, like sap from a tree, is based on an entire misconception of the hair's structure and nutrition. The hair does not contain any more sap than a buggy whip; it is not nourished by any fluid in it, but by the blood plasma that reaches only the hair root. The hair above the skin surface is a spine of horn, which is even oiled from without, and singeing its tips has no effect whatever on either its nourishment or its growth. It is certain that singeing the hair is of no value in preventing its fall; in fact, the only value the procedure has is to the zealous hairdresser who gets his little fee for doing it—unless it is worth a quarter to the seeker after hair to think he is doing something even if he is not."

INSANITY AND AMENORRHEA.—J. W. D. Hooper writes that a patient, when seen twenty-one years old, was anemic and constipated, and had suffered from melancholia for three years, during which time she had menstruated twice only, very scantily and with great pain. After more than twelve months of treatment, which included curetting, she was placed in an institution, where she spent a year. She was then found to be suffering from religious mania with amenorrhea, was occasionally vicious, and at such times refused food. It was decided to remove an ovary and to substitute for it a more normal organ taken from a sane person. A hysterectomy upon another patient provided the required material, which after removal was placed in Ringer's solution at blood heat. Four and a half hours later the abdomen of the insane woman was opened. Both ovaries were very small, hard, pale, and cirrhotic. The more abnormal of the two was removed, the broad ligament on that side split, and the new ovary, cut into three slices, was embedded in the nest thus provided. Recovery was uneventful, and twenty-four days after the operation a normal, painless, profuse menstruation took place. The mental condition improved rapidly, and in six months the patient was dismissed to her home. She was then menstruating regularly, had put on six pounds in weight, and was exceptionally bright and happy. She declared her intention of doing her utmost to repay her parents for the trouble and expense of her treatment; in a word, her insanity had entirely vanished.—Australian Med. Jour.

BLOOD TRANSFUSION.—Blood therapy, or the therapeutic use of blood transfusion, and the conditions in which it is applicable, are treated of by E. Lindeman, New York. Many diseases produce change in the quantity and quality of the blood, which is responsible for many pathologic conditions. Among the conditions in which transfusion has been used are the aplastic anemia of young adults, which is always fatal. Its use, therefore, has not been of benefit, as is shown by his own experience, and supported by the literature on the subject. Splenic anemia, with hematemesis, including Banti's disease, is associated with syphilis in many cases. In these cases transfusion will be of little use until the syphilis has been treated, but after the syphilitic process has been controlled, it is specific. Following the combined therapy,

splenectomy may be considered. In gastric ulcer with hemorrhage and anemia, nature provides two factors of safety: (1) a fallen blood-pressure, and (2) a decrease in coagulation time, due to the dilution of the blood with the tissue fluids. If transfusion is done, it had better be done after all bleeding has ceased, and time allowed for a crust to seal over the bleeding area. If operation is contemplated, transfusion should preferably be done first. According to Lindeman's experience, it is in deep ulcers, liable to perforate, and characterized by severe and frequent hemorrhages that operation is desirable. In alcoholic cirrhosis of the liver with severe secondary anemia, the liver cirrhosis is not a contraindication to transfusion, and the results are good. Lindeman has had no success in treating acute leukemias by transfusion. In hemophilia, the coagulation time is greatly delayed, and prothrombin decreased in the blood. Transfusion supplies this, as well as replaces the lost blood, and is the measure of choice, and should be performed during the active stage of bleeding. After transfusion, the coagulation time is materially reduced, but, curiously enough, does not remain constant, as shown in a case here reported. In the simple anemia of high degree and unknown cause, and frequently fatal, occurring most often in young women and girls, blood transfusion has produced striking results after other methods have failed. The new blood corrects the pathologic condition, and apparently stimulates the patient's blood-making power. Where bleeding cannot be controlled after cholecystotomy, human serum in large quantities may help, but in some cases fails, and transfusion is necessary. Sometimes it should be repeated several times—every day or every other day. In carcinoma and sarcoma, there are theoretical reasons for transfusion, and Crile has reported a cure of sarcoma in a dog by this means. Lindeman has had no experience in regard to its value in these conditions. He reports a case of chronic sepsis in a child, with severe anemia and multiple purpuric hemorrhages, cured by blood transfusion, and from observation of this case and others, he has become convinced that the blood of a normal healthy individual contains bactericidal elements, or elements that inhibit the bacterial growth, of considerable potency, that may enable the patient to develop his own active immunization and destroy the organism causing the disease.—Jour. A. M. A., Oct. 31, 1914.

THE BENZOL GROUP AND HEMATOPOIESIS.—Benzol as a remedy in the treatment of leucemia has attracted considerable attention within recent years, but there has been some difference of opinion as to the real action of benzol upon the leucocytes. Pappenheim has advanced the view that these are not destroyed by benzol, but are only made to accumulate in the capillaries of the internal organs and especially in those of the liver. On the other hand G. B. Bianchi claims to have demonstrated an actual leucopenia evoked by benzol as well as a severe aplasia of the bone-marrow and an atrophy of the spleen and of the entire lymphatic apparatus. In "Pathologica," August 15, 1914, the same observer reports the results of his experiments undertaken with the view of determining the effects of other hydrocarbons belonging to the same group as benzol, namely, toluol, xylol, and cumol. Although these substances bear a close resemblance chemically to benzol, they have a different effect upon the leucopoietic apparatus. This effect is an excitatory one, being manifested by a leucocytosis. In daily doses of 1 to 2 Cc. per kilogram of body weight, these substances cause in the rabbit a leucocytosis associated with a hyperplasia of the bone-marrow, an hypertrophy of the spleen, and a slight enlargement of the lymphatic glands. It has been noted by Selling that in certain cases the first injection of benzol causes a slight leucocytosis. This is interpreted as evidence of an initial excitatory phase in the action of benzol. Bianchi suggests that the other aromatic bodies studied by him might in larger doses have an action similar to that of benzol, namely, an irritative phase followed by one in which depression and atrophy are pronounced characteristics. —Med. Record.

THE ROMANCE OF CAMPHOR.—In a most interesting paper the editor of the "Journal of Tropical Medicine and Hygiene" describes the astounding conditions in which camphor is obtained in the island of Formosa, the principal source of the world's supply of this pungent drug. Although naphthalene and other products may have somewhat ousted camphor from the institutional linen room and bedding store, the institutional dispensary still relies on the drug for the compounding of many liniments and other galenical preparations. It appears that the camphor tree grows only in the most mountainous parts of Formosa, inhabited by head-hunting savages, whom none of the successive invaders of the island have been able to subdue. These savages are quite alive to the value of the trees, and fiercely oppose all attempts to get possession of the forests. Since the Japanese took the island after their successful campaign against China in the 'nineties they have been carrying on a carefully conceived plan of gradual penetration. They make paths six feet in width through the virgin forests; every 120 yards stands a guardhouse, and every fourth or fifth guardhouse is a small fort, entrenched and defended by wire entanglements. Telephonic intercommunication, machine guns, and all the resources of Western military science are employed; and the lines are pushed gradually forward. In spite of these elaborate precautions, the loss among the camphor gatherers amounts to hundreds of deaths annually. It is calculated that Formosa contains about 1,000,000 camphor trees, some 10,000 of which are cut down every year. At this rate the supply will be exhausted in a hundred years; but when the country is

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thoroughly pacified there is no doubt that the Japanese will see that reafforestation is properly undertaken and an inexhaustible supply ensured. The savages are estimated to number about 120,000; and a further twelve years will, it is thought, be required to subdue them. He concludes that the popular saying as to every particle of camphor having cost its weight in blood has some measure of justification. Next time the institutional physician orders compound tincture of camphor in a cough mixture, let him reflect on this!—Dietetic and Hyg. Gazette.

Strange Anatomy

"It is wrong to write jokes about the French soldiers' pants," said a sympathetic young lady. "They are red and flamboyant, but they cover as brave and tender hearts as ever beat."—New York Mail.

Mouth Infection.—Frank Billings, of Chicago, writes that many radiologic films of the jaws have been made at the clinic of the Rush Medical College in the Presbyterian Hospital in cases of chronic arthritis. He thinks this method is not sufficiently used by dentists and physicians, but in no other way can the exact condition of the roots of the teeth and the alveoli be ascertained. Infection of abscesses may be primary, but he is sure that disease in these conditions is often intensified and prolonged by irrational dentistry, teeth with infected pulp crowned or improperly filled. Whether primary or secondary, alveolar focal infection may be the dominant factor in the production of systemic disease, of which malignant endocarditis, chronic arthritis, and myositis are examples. They have made cultures in the clinic from the infected alveolae, and found the dominant organisms which belong to the streptococcus and pneumococcus group, and Billings refers to Rosenow's published studies for the changes in the culture and pathogenic characteristics of this group of bacteria. In addition, staphylococcic fusiform bacillus, the *Bacillus aerogenes capsulatus* and saprophytic organisms are found. But the streptococcic group are apparently the important ones. In five patients suffering from Hodgkins disease, alveolar abscess culture has revealed the diphtheroid bacillus of that infection. We also know that systemic actinomycosis may arise from alveolar infection, due to the ray fungus. These disorders, due to a focus of infection, are probably always carried by the blood. A study of the infected tissues of experimentally inoculated animals and the infected muscles, joint tissues, lymph-nodes, etc., yield special bacteria and histologically there is found embolism of the small and terminal blood vessels. Local hemorrhage and endo-arterial proliferation are seen, interstitial growth, cartilaginous, osseous, vegetative and other morbid anatomical changes, according to the character of the tissues infected. Part or complete ischemia of the tissues, due to the embolism, is an important factor, as has been experimentally shown. To manage these cases requires team work of the clinic and laboratory workers, careful examination of the patient and his history, the skill of the dentist and nose and throat specialist, gynecologist and genito-urinary expert, and others may be necessary to locate the foci of infection which must be destroyed. Tissue and exudates of foci should be carefully examined, and culture made and vaccines of the bacteria may be made for subsequent use. After the removal of the focus, the body defenses should be improved, which may involve a long and tedious period in some cases. Mental and physical rest are essential, good and wholesome food, pure air, optimistic surroundings and, if needed, restoratives, tonics and other remedies. Pain must be palliated by simple drugs or salicylates, and after a time passive exercise and graduated active exercise may be added. Autogenous vaccines may be used in some cases, especially in the later stages of chronic arthritis. The physician must have absolute control.—Jour. A. M. A.

Fatal Illness in Infants and Children.—McNeal writes that in thirteen infants from two to four months old, nearly all found dead in bed, and all apparently well developed and nourished, the lungs in eight instances showed marked congestion, bronchitis, and bronchopneumonia. This was associated in most cases with hyperplasia, general or partial, of the thymolymphatic system. The author believes that these cases of sudden death in infants may therefore be described as cases of fulminant bronchitis and bronchopneumonia, associated with status lymphaticus. The same pathologic grouping was found, in all cases examined, in a very unusual series of fulminant bronchopneumonia in boys from ten to sixteen years old. The fulminant nature of the illness in both groups may have been due in some way to the status lymphaticus, the signs of which were unequivocally present in both groups. There is some evidence that fulminant types of other bacterial infections—scarlet fever and diphtheria—are also accompanied by thymolymphatic hyperplasia or status lymphaticus. In the two groups of fulminant pneumonia, thyroid hyperplasia in a marked degree was present in every case examined (18). This condition of the thyroid seemed to have existed for some time before death. The regular association of thyroid hyperplasia with thymolymphatic hyperplasia may also be a mark of the same abnormal constitution of diathesis.—Edinburgh Med. Jour.

The Cause of Discomfort from Bad Ventilation.—"We may now conclude with reasonable certainity," says "The Journal of the American Medical Association," "that the symptoms of discomfort in a badly ventilated place are due to the physical condition of the air in respect to temperature, humidity and movement, and not to any chemical properties whatever. Flügge long ago alleged that the familiar symptoms noted in closed, crowded rooms—restlessness, headache, dizziness, nausea, etc.—are to be attributed solely to heat retention. There are investigators who, while admitting the essential facts that the malaise of bad ventilation depends on interference with heat elimination by the skin and is due wholly or in part to heat stagnation in the atmosphere contained in the pores of clothing surrounding the body, find the explanation here advanced unsatisfactory. Nevertheless, overheating is the chief evil to be guarded against in ventilation at present. Most persons realize that in our American cities the chief danger of our torrid summer days is not the heat alone, but the combined heat and humidity; few appreciate that it is precisely the same factors which are responsible at all seasons for the evil effects of the confined air of rooms. There is no doubt that the air of our American living-rooms and many schoolrooms and other assembly chambers is kept too warm. No fixed standard percentage of humidity can be set, since, the content of aqueous vapor in the

air is so closely related to temperature. As Lee remarks, if any single standard is to be chosen as the standard of healthful air, it is probably the temperature of the air as indicated by the wet-bulb thermometer, which is a measure of heat and humidity combined. The effect of clothing appears to be disregarded by nearly all who discuss these problems; indeed, the hygiene of clothing remains to be written. According to Haldane, body temperature begins to rise in fairly still air, even in persons stripped to the wasit and doing no work, when the wet-bulb temperature exceeds 31 C. (88 F.); when moderately hard muscular work is done, the rise may begin at 26.7 C. (80 F.). When ordinary clothes are worn, serious rise of temperature in still air may begin at much lower wet-bulb temperatures. Soldiers marching in uniform, for instance, are liable to heat-stroke at wet-bulb temperatures of under 21 C. (70 F.)."

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CORPUS LUTEUM, MENSTRUATION, AND PREGNANCY.—J. E. Miller writes that there is a fixed relation of dependence between ovulation and menstruation, and the rupture of the follicle precedes the menstrual discharge by about nine days. The corpus luteum is epithelial in nature. This hypothesis is supported by the history of development and the appearance of colloid drops. In the development of the corpus luteum there is first an increase in the theca interna by the deposition of fat and then an increase in the granulosa cells by mitotic division. After the rupture of the follicle the granulosa cells are transformed into lutein cells by taking up lipoid combinations and yellow coloring matter; then follows vascularization and immigration of connective tissue; then retrogression. At this period neutral fat can first be demonstrated.

The corpus luteum of pregnancy is distinguished from that of menstruation by the almost complete absence of the fat reaction, colloid degeneration, and deposition of calcium. The corpus luteum causes the cyclic change in the endometrium and the decidua and makes the implantation of the ovum possible.

In connection with Fränkel's experiments a case is reported in which after the beginning of pregnancy the corpus luteum was removed, and retrogression of the uterus took place without abortion, after the type of the absorption of the egg-chamber in rabbits. Lactation atrophy is not a reflex trophoneurosis but the result of the withdrawal of the corpus luteum. The toxicoses of pregnancy may possibly be due to hypofunction of this organ. Among forty to fifty ovaries removed by operation, the corpus luteum was lacking in one case of eclampsia. In another case of eclampsia there was a cyst in

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the center of the corpus luteum. Nothing could be seen of the normal epithelium. An internal secretion cannot be demonstrated *in vitro* by the complement-fixation method, for the hormones do not cause the formation of antibodies. Experiments with vital staining have as yet had no results. Menstruation is only an unburdening of the hyperæmic uterus. Rutting and menstruation are different phenomena. The menstrual blood is possibly a nutrient fluid for the ovum. The tenth day before the beginning of the new period is the most suitable time for artificial impregnation. Only the ovum of the first missed period is implanted. The duration of pregnancy should be reduced nineteen days.—Zentralbl. f. Gynäk., 1914, 618, per Surg. Gynec. and Obstetrics.

The Flight of Flies.—"One of the problems that has arisen in connection with the part played by insects as carriers of disease," says The Journal of the American Medical Association, "concerns the distance which they may be able to travel from one locality to another. This has frequently been considered in this country in connection with mosquitoes which are responsible for the prevalence of malaria. With their breeding-places known, it has become desirable in some cases to ascertain what the range of their activities might be in respect to the territory which can be covered by insects so small as are the blood-sucking *Diptera*. It has been learned in this connection that some of the mosquitoes which inhabit salt marshes near the seacoast may be found inland at a distance as great as three miles.

"Far less appears to be known with regard to the migrations of the common house-fly, *Musca domestica*, an insect that has been charged with responsibility for the spread of typhoid fever and other infectious diseases. A series of studies conducted in Cambridge, England, on the range of the flight of flies of this species has been made the subject of a report to the Local Government Board on Public Health and Medical Subjects. Upward of 25,000 flies were liberated, under various meteorologic conditions, from the medical buildings at Cambridge. Of these insects, colored for identification, 191 were recovered at one or other of about fifty observation stations employed for their recovery. The results showed that house-flies tend to travel either against or across the wind. The actual direction followed may be determined either directly and by the action of the wind, or indirectly owing to the flies being attracted by any odors it may convey from a source of food. A point in favor of this supposition is the nature of the station at which flies were recovered after they had traveled any distance. These comprised a butcher's shop, public houses and a restaurant, all of which gave off odors that are notoriously attractive to flies.

"It is likely that the chief conditions favoring the dispersal of flies are fine weather and a warm temperature. The nature of the locality is another considerable factor, because in towns flies do not travel as far as in open country, this being probably due to the food and shelter afforded by the houses. With regard to the altitude of the point of liberation, flies set free from the roof tend to disperse slightly better than those liberated from the ground, but the differences are not very considerable. It has actually been observed, with regard to the vertical flight of the house-fly, that it may mount almost directly upward to a height of forty-five feet or more. The time of day appears to influence the dispersal of the insects, inasmuch as, apparently, when set free in the afternoon they do not scatter so well as when liberated in the morning.

"The maximum flight observed in the thickly-housed localities in Cambridge was about a quarter of a mile. In one case, where a part of the distance was across open fenland, a flight of 770 yards was noted. In experiments conducted in Cook County, Illinois, by S. A. Forbes, flies were trapped and, after being sprayed with a chemical solution for recognition, were liberated from a hospital in that district. They too were recovered at distances ranging up to a quarter of a mile from the point of liberation. It appears most likely that the distance flies may travel to reach dwellings is controlled by circumstances. Almost any reasonable distance may be covered by the fly under compulsion to reach food and shelter.

"It has been stated that house-flies, like other insects, exhibit color preferences. Thus it is reported that a French observer, having noticed that flies did not rest on walls covered with blue paper, blue-washed the walls of his milk house and found that insects did not visit them. A recent statistical study of the behavior of the insects in this respect has failed to bring evidence that the flies display any marked color preference. Therefore it seems unlikely that the adoption of any particular color for the walls of houses and stables will have any effect on the numbers of flies entering them."

The Alleged Prolongation of Life by Matrimony has always been taken humorously, but if it is true it is a rather serious medical fact of more than ordinary scientific importance. It is said that the vital satistics of Chicago show that the death rate of bachelors is about 30 per cent. higher than that of husbands, and that maids have a 40 per cent, higher rate than wives. On the fact of such statistics insurance companies should reduce the premiums on the policies of married people or raise the rates on the unmarried, but there are other factors which may render the figures worthless for any deduction as to the hygienic value of marriage. It is no doubt true that the assumption of family responsibilities has a salutary sobering effect upon young people who abandon harmful habits and frivolities of youth, but it is difficult to believe that "wild oats" could cause so much mortality at such early ages, for we must assume that the average age of bachelors is far less than that of married men. Besides, women do not sow wild oats as a rule. It is more reasonable to impute the difference to the fact that disease or abnormal development keeps from matrimony a large number of people doomed to early death. The married state is generally assumed to be the normal, and perhaps it is by the ordinary laws of selection and survival of the fittest. It is drawing a rather broad generalization to state that all those who enjoy single blessedness are abnormal in some respect, yet something has thrown them into the class which takes no part in keeping the species in existence. This of itself might be competent to explain the higher death rates of the unmarried. Weddings are generally postponed for ill-health or even abandoned, and it is safe to say that couples who have weathered all the storms of infancy and youth are a selected class with a much greater life expectancy than those whom Cupid has passed by. Perpetuation of the species is left to the fittest after all, and nature has an infinite variety of ways of determining who are the fittest. Man cannot be an exception to natural law. Of course those who are not the fittest to keep the race going

do have offspring, but such lines run out in competition with those better fitted for the struggle. Nevertheless, the statistics might prove that a normal married life does promote health and increase our years. We hope so at least. Whether the married state can restore lost health is another question, except in a few conditions remedied by a pregnancy. Indeed the new burdens may be an added load which will act like the final straw to break the back of resistance. As physicians then, we should be very careful as to recommending marriage when this question is put to us professionally. Its benefits are for the fit, not the unfit, and even if we do believe it lengthens the lives of the fit, it might shorten the rest and also render them not worth the living.—American Medicine.

Crocker Cancer Research Fund.—The first annual report of the George Crocker Special Research Fund for the investigation of the nature and cure of cancer has just been published by Columbia University, and gives a résumé of the general lines along which research has been conducted under the director, Prof. Francis C. Wood, since the opening of the new laboratory building in December, 1913. All the research work on cancer is now carried on in the Crocker Laboratory, which is a three-story and basement, fireproof structure, recently erected on East Field, at the corner of Amsterdam avenue and 116th street. The necessary funds were supplied by the Trustees of the University, and the building is very completely equipped for the purpose for which it was designed. The working staff consists at present of the director and five assistants, all well known by their previous investigations in pathology. The extent of the work as now conducted is shown by the fact that at least three thousand mice and rats are required each month for inoculation with experimental tumors. The report goes into some detail as to the research being conducted. One line has been a study of the action of radium and X-rays on tumor and normal tissues growing in culture media, and the director reports that the results so far obtained are extremely discordant, showing that great caution is necessary in drawing any conclusions, and that hasty generalizations as to the sensitiveness or lack of sensitiveness of tumor or normal tissue to these rays are not warranted. Another large series of experiments has been carried on to test the action of radium on primary tumors of mice, and the results have not shown that this agent has any great therapeutic effect on such growths, although they correspond very closely with tumors in man. In addition to the work on animals, a considerable amount of radium treatment has been given to patients in hospitals, and data are thus being collected which will permit of a much more accurate judgment as to the therapeutic effect of radium than has been possible from previously published reports. Still another phase of the work has been a study into the conditions under which it is possible to obtain immunity to the chicken sarcoma discovered by Peyton Rous of the Rockefeller Institute. Investigations on the therapeutic effect of certain collodial silver preparations, so highly vaunted, not only in this country but also in Germany, as of great value in the treatment of malignant disease, have shown that, unfortunately, such substances have no effect on cancer in either man or animals. In addition to this research work some of the members of the staff have given courses on the nature and diagnosis of human and animal tumors. The Fund has already collected a valuable library of works on cancer, and a large number of slides and specimens of tumors are being gathered and filed for reference. The director hopes that the laboratory will ultimately be able to offer to those who are interested in the subject, including both physicians and the lay public, not only the results of scientific research, but also general information concerning the diagnosis and treatment of cancer.

Armor for Soldiers.—Many years ago several inventors developed bullet-proof cloths or breast plates, and in spite of much advertising their suggestions were never adopted, much to the surprise of civilians. The reason is very simple. If the bullet is stopped, its energy is transmitted to the shield which in turn delivers a blow to the soldier's body. The severity of the blow depends upon the velocity of the shield, and if the shield is very light the chest wall receives more or less injury. In order to be harmless the shield must weigh at least ten pounds. It is a repetition of the old circus trick of striking with a sledge hammer, an anvil on a man's chest. If in place of the anvil we substitute a thin metal plate, the blow would be fatal, and the sledge hammer has about the same energy as a bullet at high velocity. The relative momenta of the sledge and the anvil or bullet and shield enter into the mathematics of it, but need not be explained here. If the shield weighs but six or eight pounds, the blow of the bullet almost knocks a man down. The cloths consisted of expensively woven cotton and wire, and of course were rejected because cheap steel plates of the same weight were equally effective. The latter have been adopted, not to be carried all the time since the weight is prohibitive, but for occasional protection lying down between advances before trenches. That is, soldiers are not to wear armor but to get behind it, as in armored ships, forts and motor cars. This probably explains the report that armored breast plates are being adopted. A breast plate would stop or deflect only a small percentage of possible hits anyhow, but a shield is a good protection to one lying down.—American Medicine.

Progressive Torsion Spasm.—This condition was first described by Ziehen under the name of the tonic torsion neurosis. Oppenheim then styled it dystonia deformans, while Flatau preferred the designation progressive torsion spasm. Another term proposed, also by Oppenheim, descriptive of the gait is dysbasia lordotica progressiva. Until its isolation the affection was probably classed under hysteria, and perhaps in some cases athetosis. A patient with this affection shows at least two components. One is the attitude, and the other the peculiar muscular movements. If the patient is at rest on his back with the limbs somewhat drawn up and flexed, the movements are not as marked as when he stands or walks. The muscular activities are in part intrinsic and in part locomotive. They undergo constant tonic contraction and relaxation, the rhythm of which suggests that of clonus. The muscle bellies alternately swell up and dwindle in size. As a result torsion movements especially occur. There is, however, a general restlessness more marked when patient is lying down. As a result of the tonic spasms the spine is flexed and rotated. The thighs participate with the trunk but the muscles of the head and legs proper are involved in a minor degree only. As a result of contractions of the muscles of the trunk and thighs the body becomes somewhat arched, and the spine is often lateroflexed.

A case of this sort was reported by Seelert, the patient being a boy of seven years. The chief point of interest was the possible relationship to hysteria. Oppenheim in discussion emphasized the psychic indolence of the patients. Rothmann called attention to some artificial features in the disease picture. Bonhoeffer was satisfied that the affection is not psychogenic. Although at first sight it appeared eminently hysterical, prolonged observation of the evolution of the disease led him to class it among the choreatic processes as an organic disease.—Med. Record, Nov. 21, 1914.

Bare Walls and Monotony.—"The bare white walls of the modern sanitary hospital," says The Journal of the American Medical Association, "have a certain monotony which, in many instances, forms a dull and dreary aspect to the sick person who must lie for the larger part of every day and find nothing else in his horizon. Brayton refers to a patient who, when he left the hospital, said: 'Sister, tell the next patient who occupies this room that there are 391 fleurs-de-lis in the decoration on the wall.' Another patient reported to his friends that 'his room was well aired by two large windows, that there were three fly-specks on the big white walls, and the brass door knob was most interesting.' In Indianapolis two units of the City Hospital, known as Burdsal units in honor of the founder, have been decorated so adequately that the foregoing criticism does not apply. Some of the best artists—men and women of national fame—have collaborated in the work. A visiting artist, looking over the walls already covered, remarked that there were only two buildings in this country that these decorations recalled, one of them the Boston Public Library, the other, the Congressional Library. The idea, while not wholly unique, has been carried out with a quality and completeness probably not equalled elsewhere. In the words of Brayton: 'These beautiful and peaceful decorations may minister to a mind diseased and pluck from the memory a rooted sorrow.' The achievement is worthy of being widely copied if other communities can enlist equal enthusiasm and a similar cooperation of artists."

Smears.—The commonplace is more important than the unusual. Consequently the writer of a monograph who takes too much for granted might as well have lost his understanding, so far as conveying the fundamental and elemental facts of his subject to the reader: his book is full of holes; incomplete and still-born. Volumes upon gynecological subjects have been written for many centuries, yet their everyday theme of leucorrhea still furnishes a hiatus between book and laboratory, as no mind not specially trained could properly carry out their simple but unexplained order to "Take a culture." Personally I know how to take cervical smears because I was first instructed by word of mouth, but exploration of eight books on gynecology, two on bacteriology, and two on microscopy has failed to yield any information worthy of the name.

Such information in brief would be this: "Cleanse the urethra and cervix, pass a platinum loop to the internal os, and spread this secretion on a glass slide. Express the contents of the urethra and smear these on another side." Of course a lubricant makes comfortable the introduction of a speculum but it spoils specimens. Vaseline, green soap, or other grease should be carefully wiped out with dry cotton because if not thus removed from vagina and its introduced speculum, they mix with the secretion, give the smears a coat of grease and present to the laboratory man the problem of staining an oil with an aqueous solution. Should the lubricant contain a germicide, diagnosis and truth will be contradictions.

General surgeons are apt to sweep down the vagina with a finger and wipe the latter on a slide. Inasmuch as this contains the whole vaginal flora, overgrowth and all, it is not very good for staining purposes especially as the lubricant used on the finger is well mixed with the specimen.

The bacteriologist requires the platinum-loop-cervical sweepings with possibly an additional smear of urethral scrapings. More than this is valueless and may be a detriment.—Douglas H. Stewart, in Med. Record.

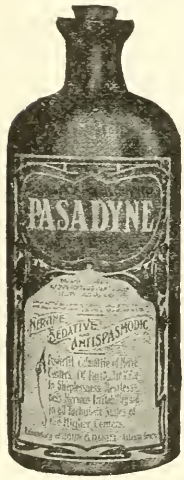
Migrating Needles.—The subject of migrating needles and other pointed objects figures more conspicuously in the secular press than in medical literature. Physicians have long known that the testimony of patients on this possibility is often untrustworthy and that the occurrence of needles, etc., in certain localities, like the female bladder, is due to deliberate introduction from without. This objection, however, cannot be raised in the case of animals, and there is abundant evidence that pointed objects such as needles are swallowed with the fodder, undergo arrest in the gullet and eventually penetrate into the heart, where they may or may not cause death. At a meeting last May of the Aerztlicher Verein of Hamburg (Deutsche medizinische Wochenschrift, October 1) Fraenkel related a case in which an aspirator needle, which had broken off while in the thorax of a goat, traversed the left lung and perforated the heart so that death occurred suddenly three weeks after the accident. Some time ago Professor Marchand found at autopsy a needle nicely healed into the myocardium in which it was rendered visible in skiagrams. No history of an accident could be obtained and the integument was searched in vain for remains of a lesion.—Med. Record.

Game, Stock and Citizens.—The epidemic of foot-and-mouth disease and its effect on the packing industry and the stockyards of Chicago have been commented on widely in the daily press from various points of view. "One of the most illuminating comments," "The Journal of the American Medical Association" believes, "appeared in a recent issue of the Chicago 'Journal' under the heading 'Live Stock Versus Quail.' Taking the best available estimates of the amount of live stock contained in the state and figuring on an average value of horses at $140 a head, milk cows at $65, other cows at $50, swine at $15, sheep at $6 and mules at $150 (minimum valuations, as most will admit, the Chicago 'Journal' says the total value of live stock in Illinois would be $435,276,000, for the protection of which the State legislature appropriated for the current year a total of $37,340. By way of comparison, the Chicago 'Journal' quotes the appropriation for the protection of fish and game for the same time, which amounts to $151,600. The Chicago 'Journal' properly characterizes such a situation as 'intolerable.' It says: 'To spend four times as much money protecting quail, ducks and prairie chickens as we spend in caring for one of the basic industries of the State is sheer communal lunacy.' This is true. The farmers and business men of Illinois should see to it that every cent that is necessary to protect the live stock of the State is

provided, no matter what economies may be necessary in other directions. But, if such appropriations are justified for the protection of the lives and health of animals, how much should be appropriated to protect the lives and health of the men, women and children of the State? Certainly more than for fish, game and live stock. Yet the appropriation for the protection of the 5,638,591 men, women and children in the State was for 1914 only $120,000, $30,000 less than was appropriated for the protection of fish and game. Are the lives of its citizens of less value to Illinois than the preservation of its quail and bass?"

PAIN: ITS RELIEF.—If ever direct methods are needed it is in the relief of pain. And the application of a direct method in pain embraces, of course, the administration of a reliable and effective anodyne—and such an agent should be free, to the greatest extent, from evil effects.

A product that answers these requirements of an anodyne is PAPINE (Battle). Its effect is prompt and positive and it possesses a minimum of bad effects. For these reasons papine is entitled to first rank among pain-relieving agents.—(Battle and Co., St. Louis, Mo.).



A SEDATIVE IN SEXUAL IRRITATION.—It is in irritation of the sexual centers, manifested by exaggerated desire, premature ejaculation with lack of relief following, sleeplessness and a general instability of the nervous system, that PASADYNE (Daniel) will exert a marked influence of a beneficial character.

A quality that gives an added value to PASADYNE is its freedom from untoward effects. It is well known that this product is a preparation of passiflora incarnata, the name PASADYNE distinguishing it from inferior products and preventing substitution.

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THE SCHOOL SPREAD OF CONTAGIOUS DISEASES.—The increasing opinion that infections of childhood are generally if not always contracted by direct contact with a prior case of carrier, has put a new weapon in the hands of those who object to schooling at early ages. The younger the child the more severe are all these diseases, whooping cough for instance being fatal to one in four attacked in the first year, and being almost harmless at twelve to fifteen. Indeed at fifteen, we are beginning to dismiss these diseases as a source of worry. The longer, then, we can keep the children out of school the more chance they have to develop properly and reach maturity. Nevertheless, we doubt whether this knowledge will have the slightest effect on the tendendy to begin school earlier and earlier. Medical inspection will be depended upon to recognize and isolate the infected. As a matter of fact, in spite of occasional condemnation of schools as places for the swapping of infections, we are credibly informed that remarkably few cases are traced to schoolroom infection. They are infected from companions in other places, as they are well separated in the schoolroom. Sunday schools are coming in for much of the blame and though there is closer contact than in day schools, the churches exercise no precautions whatever and have no medical inspectors. The still closer contact in moving-picture theatres has been accepted as the main reason for some recent epidemics, and health authorities in small communities are even closing the shows on the appearance of scarlet fever and diphtheria in town. This is not practicable in a large city where all the diseases of childhood are constantly present, but would it not be a good plan to exclude children up to ten or twelve anyhow, and up to sixteen if there is any special prevalence of disease in the neighborhood? By common report, the mental effect of the average photo-play is often very bad in children less than sixteen, and there is not enough good in them to run the risk of infection.—American Medicine.

THE SIGNS OF DEATH FROM FREEZING.—"It is not clearly understood how severe cold causes death," says The Journal of the American Medical Association. "A variety of causes have been assumed to be at work—accumulation of carbonic acid, paralysis of the vasomotor centers, loss of heat, accumulation of blood in the heart, anemia of the brain, destruction of red corpuscles—all of which tends to show that we really do not know anything definite as to the precise cause. The signs of death caused by exposure to cold are also poorly understood. This is especially unfortunate in view of the fact that in all northern countries cases of death from freezing frequently present themselves for investigation. In Russia, for instance, at least several hundred persons die each year from the immediate effects of severe cold, and in the Medicolegal Institute in Moscow about 2.5 per cent. of all post-mortem examinations concern deaths from freezing. Recently Krjukoff has published the results obtained from a study of the Moscow material with a reference to the signs of death from freezing, and he finds that in 40 per cent. of the cases the presence of swollen and glistening bluish-red or bright scarlet-red spots in the skin of the ears, hands or feet were present and that such spots are reliable signs of the action of cold on the living skin. Cerebral and pulmonary hyperemia and edema were frequently found, and the heart commonly was overfilled with blood; but these appearances were not distinctive. Hemorrhagic erosions were found in the stomach in 72 per cent. Krjukoff regards the absence of glycogen and sugar in the liver as a good sign of death from freezing, particularly valuable because both these substances are present in the liver in acute alcoholism."

ALUMINUM COOKING UTENSILS.—Utensils of aluminum are now so largely used for culinary purposes in institutions that the question as to what effect the various articles of food and cooking materials have upon the metal is one of considerable importance. In this connection some interesting experiments have recently been conducted at the Lancet Laboratories, which, on the whole, tend to show that with ordinary care there is little danger of contaminating food by the use of *pure* aluminum vessels. According to the report, the observations made, under conditions similar to those prevailing in the kitchen, were the effect of cold and hot water on aluminum, of a 1 per cent. solution of common salt, of water and acetic acid, of the same solution with the addition of salt, of tartaric acid, carbonate of soda, of bacon and tomatoes, with butter, salt,

and pepper, fried in an aluminum pan, of preparing soup, and of boiling vegetables in an aluminum saucepan. The only instance in which any reaction worth consideration was shown was in the use of carbonate of soda, when the metal became discolored, and a test of the solution strongly indicated the presence of aluminum. Traces of aluminum were also found in the experiments with salt, tomatoes, beefsteak, preparations of soup, apples, and Brussels sprouts, but they were so slight as to be entirely negligible. As regards the tests with water no sign was found of the presence of suspended particles of the oxide of aluminum, or of a soluble salt in water boiled in an aluminum saucepan. Wet aluminum does, however, oxidize when left long in contact with the air, and it has been found that if cold water be left in an ordinary aluminum vessel for twenty-four hours a gelatinous substance sweats out containing aluminum and silica. As a protection against the combined action of moisture and air it is recommended that the surface be covered with a film of hydrocarbon oil.—The Hospital.

Reproduction and Race Betterment.—In a discussion on Reproduction and Race Betterment, published in the Pennsylvania Health Bulletin for February, 1914, Dr. Samuel Dixon, Commissioner of Health for that State, points out that society absolutely requisite for the continuance of our present civilization is divided into domestic and civil. Dealing with the former the hygiene of married life must be considered, and this brings up the point with regard to the suitable age and conditions of life at which the bonds of matrimony may be assumed. The writer lays down the following rules as to marriage: First, a man should not marry unless into a family with a history of reasonable longevity, free from hereditary disease. He should not marry a woman advanced in life, delicate, feeble, or afflicted with any inherited deformity. The age most proper for women in this climate is nineteen or twenty years, and for men twenty-four or twenty-five years. Women of a nervous temperament, those who are extremely irritable, hysterical, subject to convulsions, or to epilepsy from organic disease, ought to avoid matrimony. In this country matrimonial contracts between the sexes before the ages of twenty-five and nineteen respectively, are contraindicated because, as a rule, previous to these periods of life, the body is not fully developed, the different functions are not perfect, and the sexual organs being only in progress of their growth, any offspring developed by them in their immature condition, must be deficient in vital power.

The author states that according to an eminent authority, the principal sources of degeneracy, which appear at present to be most active in the world in their influence for evil on large masses of mankind may be grouped as folows: (1) Degeneracy from toxemia, or from the abuse of alcoholic fluids, opium, preparations of Indian hemp, preparations of coca, tobacco, and the like; also from the effects of lead, mercury, arsenic, and phosphorus, and from the use of unwholesome vegetable food, such as diseased rye, maize, wheat, and the like. (2) Degeneracy from the persistent pernicious influence of malaria. (3) Degeneracy from certain peculiar geological formations, soil, and water, as seen in the development of goiter. (4) The generations which follow the one which has and then afflict large populations, profoundly influencing the system, and engendering those morbid temperaments whose types are fully expressed in those generations which follow the one which has suffered from such epidemic pestilences. Many such epidemics act like toxic agents on the nervous system. (5) Degeneracy from the effects of the great town system, as it is called. The chief elements of such degeneration are unhealthy situations, a noxious local and general atmosphere, insufficient air, insufficient and improper nourishment, deleterious avocations, moral and social misery, and crime. (6) Degeneracy from fundamental morbid states, congenital or acquired, as seen in imperfect cerebral developments, deaf-mutism, blindness, constitutional diseases and diatheses, implanted, hereditary, or acquired, such as syphilis and scrofulosis. (7) Degeneracy from mixed causes, from consanguineous marriages. It will be gathered from a study of the above conclusions that heredity and environment would appear to exert almost equal influences upon the production of degeneracy. Probably, this is indeed the case.—Med. Record.

For the closure of abdominal and other wounds fine sutures applied close to the skin edge and only through the skin thickness produce little or no scarring. Those taking large "bites" of the skin and subcutaneous fat, so commonly used, leave ugly "stepladder" or "centipede" scars. Tension sutures, too, also used by many surgeons, are rarely necessary, even after breast amputations.—American Journal of Surgery.

Damaged Goods.—With a considerable blare of trumpets a theatrical troupe made a pilgrimage over the country recently, ostensibly to teach the public of syphilis; later the movies showed the same thing to even greater audiences than were attracted by the original and more expensive

IF YOUR CHOICE OF HYPNOTICS
in the presence of a distinct valvular lesion or a myocardial weakness, has been
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you may well know that you have carefully observed the "safety first" rule.
Although of the highest efficiency in the relief of sleeplessness and nervousness PASADYNE (Daniel) is without immediate or remote evil after-effects.
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company. Observation of an intimate kind has convinced us that "Damaged Goods" worked greater harm than good. The play does not take into consideration salvarsan and, consequently, should not have been allowed after that important agent had established its value. In so far as it taught the employment of an intelligent and reputable physician and abiding strictly by his treatment and advice, it was good. But having omitted salvarsan and over-emphasized the awfulness and incurableness of the disease its mission has been one to increase suicide and the work of the observation ward.

Only to-day a lady came to our office who had been innocently infected with syphilis; she had to know it. A husband, a mother and a physician are now laboring to keep her from suicide, a thing which she is determined to do because she saw "Damaged Goods." If we can control her we will get her well, but she is going through a mental anguish which should not be hers. In spite of us she may suicide. Medical friends told us not to waste our time in seeing "Damaged Goods," but we are now regretful that we did not attend both the theatrical performance and the moving picture show. The unwitting information which this woman gives leads to the impression that it was as full of misinformation as any quack ever could be, or else that her interpretation was deficient beyond what her appearance would indicate.

The education of the public in many matters is tremendously important, but the what-to-undertake and the how-to-do-it requires a fund of common sense which is almost too much to expect in any one human. The possibilities for evil should be weighed in the same balances which weigh those for good. If salvarsan was left out of the text in "Damaged Goods" the copy should have been sent back to the author with the request that he remedy this impossible defect. Up to the present we have seen no good from the show, and we have seen evil unquestionable.—Medical Fortnightly.

Unappreciated Features of the School Lunch Movement.—"School lunches have become established in a large number of our cities, and a defense for their institution is now unnecessary," says The Journal of the American Medical Association. "The maintenance of such a service is no longer defended solely on the basis of the needs of the poorer classes, but is encouraged in ways to avert the criticism that the school lunch leads to pauperizing and to the neglect of maternal responsibility in the home. The unquestioned benefits of a well-chosen warm lunch, usually supplied at the cost of the materials and service, have impressed both teachers and parents, so that even the well-to-do commend and approve this latest innovation in the routine of the school day. As a rule, the school lunch room provides better food than the street vender. In most places the foods are chosen by persons trained in the field of dietetics, and the variety of dietary articles offered at one cent a portion is frequently quite impressive. It includes soups, salads, sandwiches, fruits, puddings and other dishes. The New York School Lunch Committee, in co-operation with the Bureau of Welfare of School Children of the Association for Improving the Condition of the Poor, for example, has maintained a service available to over 24,000 children in seventeen public schools situated in districts in which the need of such service is pressing. The registration has run as high as 2,353. In addition to this noon warm-lunch service, the committee has operated a special 3-cent warm lunch of milk and crackers at 10 a. m. for anemic, ungraded and crippled classes. It begins to appear that the school-lunch movement has engendered certain features which promise to contribute to the general welfare in a direction almost as important as that of the proper nourishment of the body. Educational and social possibilities, at first unforeseen, are being brought to notice. The children of the well-to-do parents and the children of the poor have learned 'to sit quietly as one family, to talk pleasantly with each other, to eat their food properly, and many acts of courtesy and generosity have been encouraged.' The appeal which the school lunches have made has not infrequently been manifested by mothers who have had their interest in respect to special foods and dietary procedures aroused. Thus the school-lunch scheme has fostered education and social as well as economic purposes."

Be exceptionally careful in your technique when catheterizing pregnant women, especially if they are complaining of vesical distress. The pressure of the gravid uterus by causing congestion of the mucosa materially increases the chance of infection. But, for that matter, be exceptionally careful at all times.—Urologic Review.

The Pituitary Body.—"The evidence that the pituitary body is essential to life is now convincing," says The Journal of the American Medical Association. "Paulesco and Cushing, using an improved technic, showed that fatal results are to be expected from removal of the anterior lobe. Partial removal of the anterior lobe led to striking changes in metabolism. The knowledge that extracts of the anterior lobe, which is glandular in structure, are without marked immediate effects when injected intravenously, whereas extracts of the posterior lobe, which is a nervous structure, produce striking immediate results, is very interesting when one considers that removal of the posterior lobe is compatible with life, while removal of the anterior lobe terminates fatally. Feeding experiments have not been wholly satisfactory. Wulzen has recently found that when young fowls were fed with anterior lobe substance a retardation of growth resulted. This effect was especially marked in males.

"From a therapeutic point of view the most striking results have come from the administration of posterior lobe extracts. Favorable results have been reported by many from the use of posterior lobe extracts in the treatment of post-partum hemorrhage, uterine inertia and post-operative shock; on the other hand, its use in labor is in certain cases followed by grave results, rupture of the uterus being reported after the repeated administration of some commercial preparations.

"The recent work from the Hygienic Laboratory by Roth, of the Public Health Service, on the standardization of pituitary extracts may throw some light on some of the results obtained in therapeutics. Roth examined preparations obtained from six different manufacturers and found that the activity of commercial posterior lobe extracts varied widely when tested by three different methods, their relative activity on the isolated uterus of the guinea-pig being as 7.5 to 1. The commercial preparations which have been responsible for untoward results have therefore been shown to be exceedingly active ones. Roth could assign no positive reason for such great variability. He concludes that there is need for

uniformity in the strength of commercial pituitary preparations, and to bring this about advocates their standardization on the isolated uterus of the virgin guinea-pig, suggesting an arbitrary standard. He further suggests that clinical studies should then be made to determine the therapeutic dosage."

A New Method of Using Radium.—An ingenious method of making applications of radium to inoperable tumors, is described by Walter C. Stevenson. It consists in the introduction of small quantities of radium within the caliber of hyperdomic needles, which are subsequently plunged into the body of the tumor. The radium may be enclosed in small glass capillary tubes, the latter being pushed into the needle canal. Five or six, or more or less of these needles may be inserted into the body of any tumor.

Two interesting cases are described. One was an inoperable malignant tumor of the parotid gland. Five needles, charged with the radium as described, were driven into this body. These contained altogether 5.08 millicuries of radium emanation. At the first sitting they were left in place an hour and a half. At the next treatment the quantity of emanation was reduced, the average employed being 4.8 millicuries. Apparently daily treatments were given, the total treatment consisting of 37½ hours of application. At the end of the course of treatment the size of the tumor was greatly reduced and the condition of the patient much improved in every way.

The second case described was one of excessive scar formation on the wrist following a burned and lacerated wound received five years before. The wrist and fingers were fixed in a flexed position and the whole hand was quite rigid. Six needles were inserted into the scar tissue as already described, these needles containing a total average of about 5.5 millicuries of radium emanation. After five days the scar was soft and the wrist could be straightened, while the thumb and finger could be flexed to a considerable extent. Doctor Stevenson declares that the results obtained in other cases under treatment were also encouraging.—Amer. Jour. Clin. Med.

Practical results indicate that silver nitrate in ½ or 1 per cent. solution is the best remedy for lavage of the renal pelvis. Lavage should be tried in all cases of pyelitis which are slow in responding to vaccines or other treatment. Where only the pelvis is involved highly satisfactory results may confidently be looked for.—Urologic Review.

Elements Involved in the Causation of Caisson-Disease.—The factors determining the production of the pathologic conditions developed in persons under compression or (more often) decompression of the air in which they are confined, as well as the individual ability to resist the same, have been discussed by A. Bornstein, of Hamburg, before the Berliner Physiologische Gesellschaft, and may be summarized as follows (Berlin. med. Woch., No. 20; cf. Muench. med. Woch., June 2):

In the first place, the liability to have an attack of caisson-disease (occasionally referred to as tunnel-disease—although this term really should be confined to ankylostomiasis), when the atmospheric pressure is reduced, depends, firstly, upon the saturation and the desaturation of the system with nitrogen; and, secondly, upon the readiness with which the heart [organ] permits gas bubbles to be formed within itself. But the degree of saturation with the gas depends, on its part, essentially upon the "minute-volume" of the heart; and, in addition, upon the insanguination of the heart [the organ in question] as compared with the total blood supply of the entire body, and also upon the absorption-coefficient of the heart [the organ in question]; the latter, again, being determined principally by the proportion of fatty tissue of that organ.

The foregoing analysis of the situation, according to Bornstein, permits of a complete explanation of all the symptoms encountered in persons subjected to high atmospheric pressure.—Amer. Jour. Clin. Med.

Arsenic should be avoided, as a general rule, in the eruptive stage of psoriasis. Salicin or iron and magnesium sulphate will probably act better. —Urologic Review.

Hysterical Dermatoses.—Antoni refers rather to the relationship between these affections and perhaps to their coincidence in the same subject, because naturally an hysterical woman can suffer from any dermatosis. Since peculiar affections occur in hysteria which can hardly be artefacts but psychogenic dermatoses, there are, however, others which are readily recognized as artefacts. These smack of simulation and are recognized chiefly by their traumatic nature and by their limitation to areas accessible to the finger nails. The author relates a case of difficult diagnosis in a young woman, in which an ulcerous condition, suggesting either tuberculosis or syphilis, covered the entire abdomen. These ulcers had been treated in every conceivable way, including transplantation, but to no avail. The sores were markedly serpiginous and fetid. A few had healed with marked scarring; while in other cases sloughing areas were present. The WaR was negative, but the patient had evidently been treated with salvarsan at some period as shown by the scars following intravenous injection. There was a history of hysterical attacks and of many other phenomena suggesting hysteria, occurring especially in the skin—recurrent erysipelas, spontaneously appearing and healing sores, profuse sweating, dryness of skin, etc. At fourteen she had pus in the abdomen, requiring laparotomy and healing perfectly. Six years later she fell and ruptured the scar, suppuration followed and then ulceration. The condition had gradually spread. After reviewing the case a watch was set upon the patient, and it was learned that while supposedly asleep the patient had leaned upon a hot stove, thereby causing bullæ and eventually the severe condition described. The snap diagnosis before the watch was artefacts products by hot water.—Muench. med. Woch.

A Very Satisfactory Operation for Umbilical Hernia in cases where the ring is not of huge size and the abdominal wall not attenuated, consists in splitting open, like an oyster, each rectus sheath at the ring and for a greater or less distance in the linea alba above and below, and suturing together the posterior and the anterior layers of the two sheaths in separate layers. If the rectus muscles are not separated, as they so often are in multiparous women, the aponeurosis sutures are sufficient to approximate them. If they are separated, it is undesirable to stretch and tear them by approximating muscle sutures. The operation can be performed through a vertical or a transverse incision. The former is the more convenient and the less disfiguring.—American Journal of Surgery.

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